MICROCOPY RESOLUTION TEST CHART

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Ocean Engineering
SHIP MODEL TOWING TANK

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6 RELATIVE MOTION BETWEEN LCU AND MARINER MODELS IN A SEAWAY

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For
Naval Coastal Systems Laboratory

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RELATIVE MOTION BETWEEN LCU AND MARINER MODELS
IN A SEAWAY

Martin A. Abkowitz

A program of model seakeeping tests was carried out in the MIT Ship Model Towing Tank for the purpose of estimating the relative motion between the deck of an LCU and the top end of a cargo boom on a Mariner ship during a typical offshore unloading situation. A five foot long Mariner model, scale 1 to 96 (1/8 inch = 1 foot), was available at the Tank and the LCU model was built to this scale. Tests were carried out in scaled sea states 3 and 4 which were simulated by irregular seas of the Pierson-Moskowitz spectra representing fully developed seas of wind speeds of 15 knots and 18 knots respectively.

In each of the two sea states, tests were carried out with the models at zero forward speed oriented as follows.

Beam Seas

      Series 1 - LCU to leeward of Mariner

      Series 2 - LCU to windward of Mariner

Quartering Seas (45° heading to waves)

      Series 3 - LCU to leeward of Mariner

      Series 4 - LCU to windward of Mariner

Head Seas

      Series 5 - LCU to starboard of Mariner

Instrumentation and Measurements

The key measurement to be made during the model tests was the relative motion between the deck of the LCU and the top of the boom, in unloading position, on the Mariner ship, while the models were free to heave, roll, and pitch but were constrained in sway, surge, and yaw. Originally, when the tests were proposed, we thought that some simple mechanical transducer could be devised to measure the relative motion. However, at the necessary scaling, the LCU model weight was limited to less than one pound, precluding the use of a mechanical transducer for relative motion measurement. It became necessary to devise, design, and construct an electronic transducer requiring an element of very small weight to be located on the LCU model. The instrument designed and built consisted of (1) an electrical spark generator located on the LCU model, with an electrical system off the model for generating a high voltage spark at the rate of about one hundred a second, (2) a miniature sensitive microphone located on the Mariner model at the scaled position of the top of the boom, (3) electronic equipment which measured the time elapsed for the spark sound to reach the microphone (measurement made 100 times per second) and converting this time in a relative distance between the two, and (4) electronic equipment for digitally displaying, graphically recording, and inputing on tape the relative motion. The instrument as developed after much effort worked very well.

Two wave measurement probes were used. One was located on the windward side of the models (between the wave generator and the models)

and one close by the models on the leeward side (between the models and
the beach). The wave probe on the windward side can indicate the very
complex wave system which excites the LCU (when on the windward side),
made up of the combination of the oncoming wave, the reflected wave off
of the Mariner, the radiating damping wave of the Mariner motion, and
the reflected wave of the LCU damping off the Mariner. Measurement by
the wave probe on the lee side is a good indicator of the breakwater
effect of the Mariner hull (i.e. masking effect). The leeward probe was
placed about 1 foot from the models in order to effectively measure the
wave system transmitted through the Mariner. The probe on the windward
side was placed 23.5 feet from the models (a good distance) in order to
help indicate how long an irregular wave sample could be obtained
without being contaminated by the waves which were reflected from and
radiated from the models being rereflected by the wave generator reaching
the model again. This procedure assures that the excitation on the models
comes only from an oncoming far field wave system of a given spectrum.

Figures 1 and 2 show the relative position of the models in the test
setup, the simulated full scale loading conditions, key dimensions,
centers of gravity, metacentric height (GM), and radii of gyration (k, x
refers to roll and y to pitch axes). The top of the boom is 85 feet above
the LCU centerline.

Test Results

The data obtained during the test consisted of water surface elevation measurements at the locations of the windward and leeward wave probes and the measurement of the distance between the LCU center deck and the top of the Mariner cargo boom. These data were taken for each of the two sea states and each of the five relative orientations of the models. The waves were also measured when there were no models in the tank in order to establish the wave spectra being generated in the tank. With the models present, the generated spectra cannot be measured because of wave reflection effects.

The measured data was then spectral analyzed to give the wave and motion response spectra, and from the spectra the values of the root mean square and significant response (average of the 1/3 highest) were calculated. The spectra and the calculated R.M.S. and significant values are given in Tables 1 to 34.

Figures 3 through 7 give the wave relative motion spectra for the two sea states according to the following schedule which also indicates the test numbers used to identify the data tabulated in Tables 1 to 34.

Figure 3 - Beam Seas - LCU to leeward - Tests 115, 118

(15 and 18 refer to spectra of wind speeds, 15 and 18 knots respectively)

Figure 4 - Beam Seas - LCU to windward - Tests 215, 218

Figure 5 - Quartering Seas (45°) - LCU to leeward - Tests 315, 318

Figure 6 - Quartering Seas - LCU to windward - Tests 415, 418

Figure 7 - Head Seas - LCU to starboard - Tests 515, 518

Tests 015 and 018A refer to the case where there are no models in the tank.

From Figures 3-5, when one compares windward and leeward wave measurements, it is obvious that the Mariner has a very severe breakwater (masking) effect on the oncoming wave system. Also, comparing Figure 3 to Figure 4 and Figure 5 to Figure 6, the relative motion response is greatly reduced by this masking effect. It is interesting to note that Figure 3 shows a spike response at the Mariner's roll natural frequency (0.4 rad/sec.). Apparently this frequency is generated by the summation of the various oncoming and reflected waves as shown on the windward wave measurements and the LCU cannot act as a breakwater to the much larger Mariner. A similar, smaller spike is observed in Figure 4 at the Mariner's natural roll frequency. During the tests in beam seas, for demonstration purposes, a wave was generated with a frequency equal to the Mariner's natural roll frequency and with such a small wave height that it was barely visible. The Mariner rolled excessively, with little LCU motion, resulting in a very large relative motion between boom top and LCU deck.

Tables 31 and 32 give the significant wave height (double amplitude) in the tank (without models) for a wind speed of 15 knots as 5.06 feet at the windward probe and 3.52 feet at the leeward probe. This decrease is

expected since in a long narrow tank, especially at the higher frequencies of which the lower sea states are composed, the dissipation of wave energy by the tank walls cannot be neglected. One must remember that the distance between the two probes in the tank is approximately 25 feet with the leeward probe just one foot from the models. Hence, one estimates that at the model location a significant wave height of 4 feet was generated. From Figure 8, which shows the characteristics of fully developed sea spectra, it is seen that this value of significant wave height corresponds to a 15 knot wind speed sea state. Similarly, from Tables 33 and 34, a 6.0 foot significant wave height spectrum corresponding to an 18 knot wind speed sea state existed at the models during the tests of the higher sea state.

The following list summarizes the data and results given in Tables 1 to 34. Numbers refer to full scale values of <u>double amplitude</u> of the harmonic response.

Test No.	Significant Wave Height Generated in feet	Significant Relative Displacement in feet (double amplitude)
115	4	3.4
118	6	6.5
215	4	5.6
218	6	10.5
315	4	2.8
318	6	4.3
415	4	5.9
418	6	9.6
515	4	3.5
518	6	5.2

In reading the tables, the following abbreviations should be noted.

- last two digits of test number indicate wind speed
- B·D DISPL indicates distance between Boom top to LCU Deck
- WAVWIND - measurements on the windward wave probe
- WAVLEE - measurements on the leeward wave probe

The significant values multiplied by 1.28 will give the average of the 1/10th highest responses; by 1.67 will give the 1/100th highest; and by 2.64 will give the average of the one millionth highest response.

One can obtain the relative velocity spectra (for boom top-deck motion) by multiplying the displacement spectra by the frequency. From these new spectra, the statistics of the relative velocity can be readily computed.

Additional Remarks

In observing the model motions during a test, even those tests where the relative motion was small, there was actually large roll motion on the LCU model when it was on the windward side. Since both the roll axis and the LCU reference point are on the centerline plane, the LCU roll motion contributes little to the relative motion being measured. In direct contrast, since the boom top (reference point) is located a large distance from the Mariner roll axis, roll motions of the Mariner contribute greatly to the relative motion.

The breakwater effect of the Mariner on the LCU is tremendous. As can be seen from the figures, reflected waves play a significant role in the excitation of the LCU when on the windward side and the masking effect kills most of the excitation when the LCU is on the leeward side. It is doubted whether valid estimates of the motion responses could be predicted by a theory (computer program) which does not take these effects into account. Also, extreme difficulty can be expected to properly account for these masking effects in a simulation mathematical model. The towing tank tests appear to be the only practical approach. Full scale trials suffer from the forcible acceptance of whatever seaway happens to exist at the time and are relatively extremely expensive.
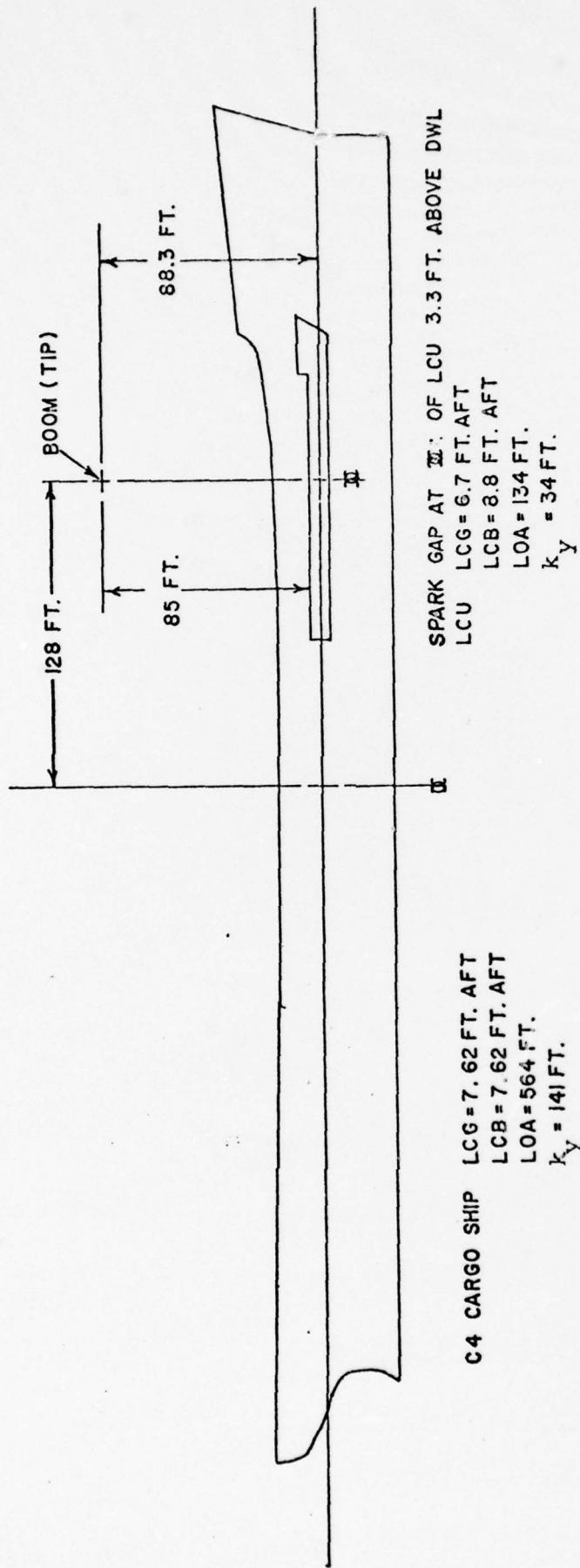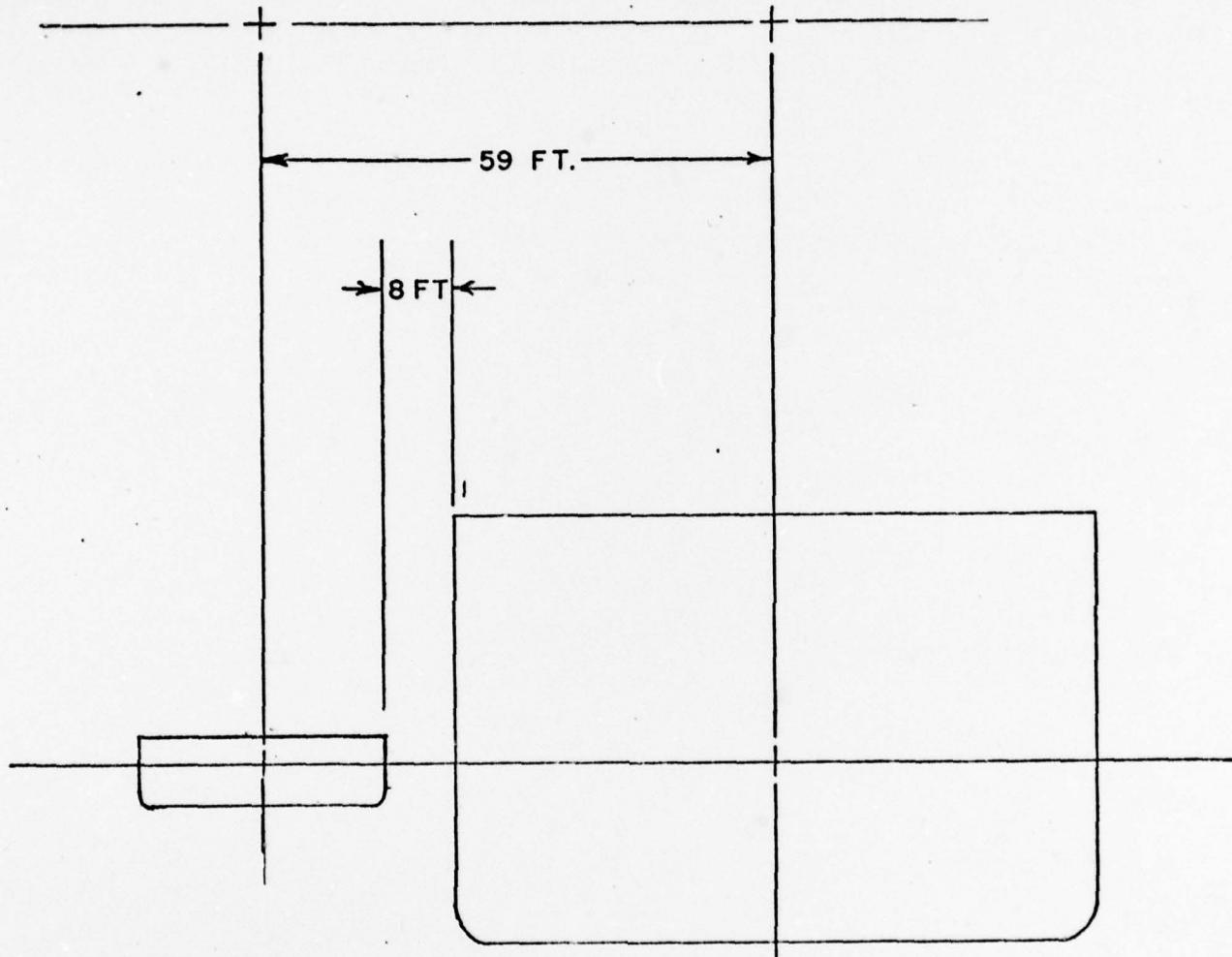
88.3 FT.

BOOM (TIP)

128 FT.

85 FT.

SPARK GAP AT $\mathbb{C}$ OF LCU 3.3 FT. ABOVE DWL

LCU LCG = 6.7 FT. AFT
LCB = 8.8 FT. AFT
LOA = 134 FT.
k_y = 34 FT.

C4 CARGO SHIP LCG = 7.62 FT. AFT
LCB = 7.62 FT. AFT
LOA = 564 FT.
k_y = 141 FT.
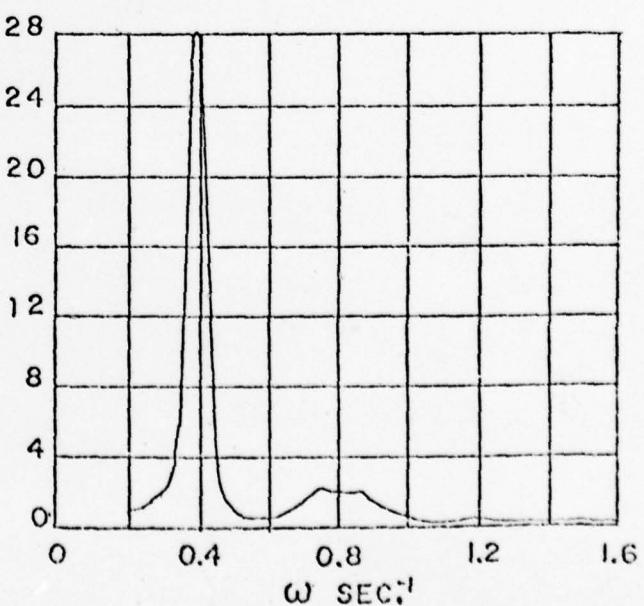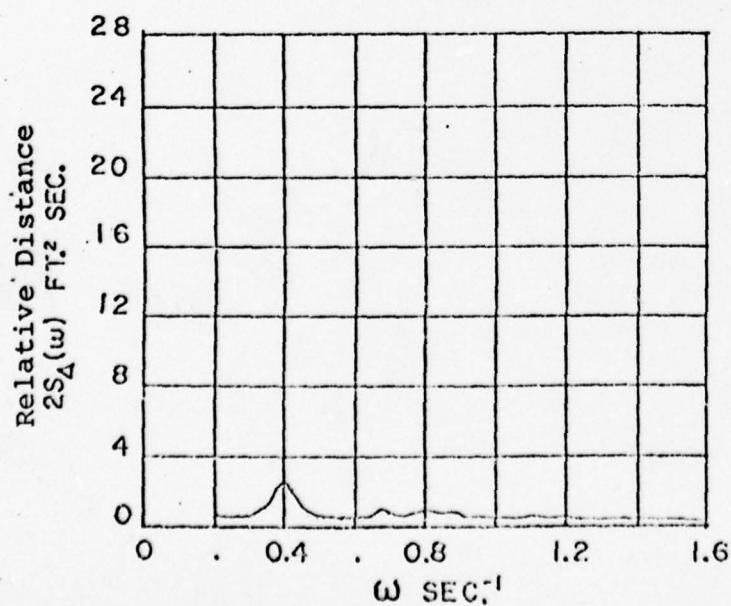
FIGURE 1

FIGURE 2

SEA STATE 3   15kts   SEA STATE 4   18kts
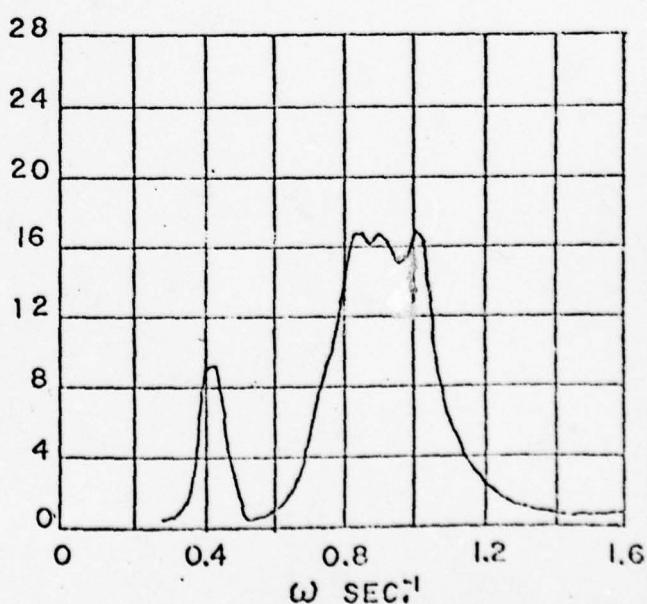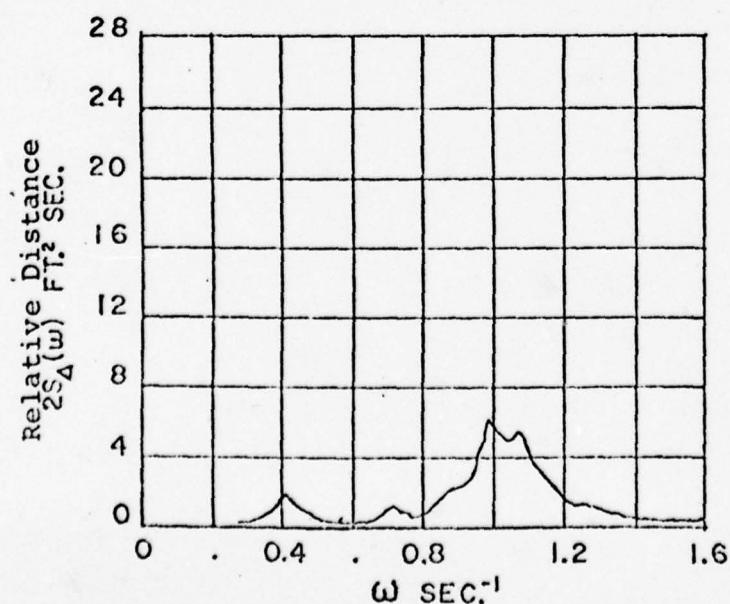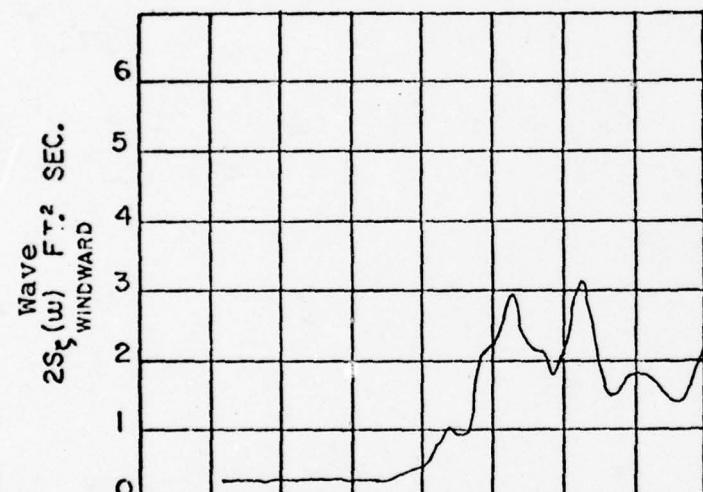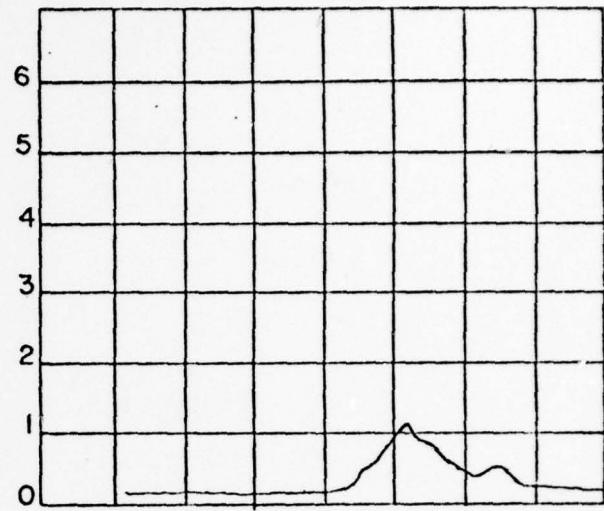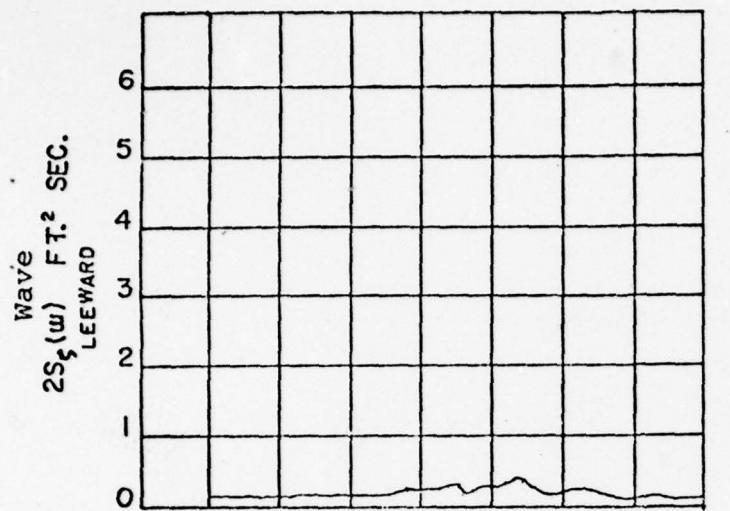
FIGURE 3

FIGURE 4.

SKEWED SEAS – LCU TO LEEWARD

SEA STATE 3 15 kts
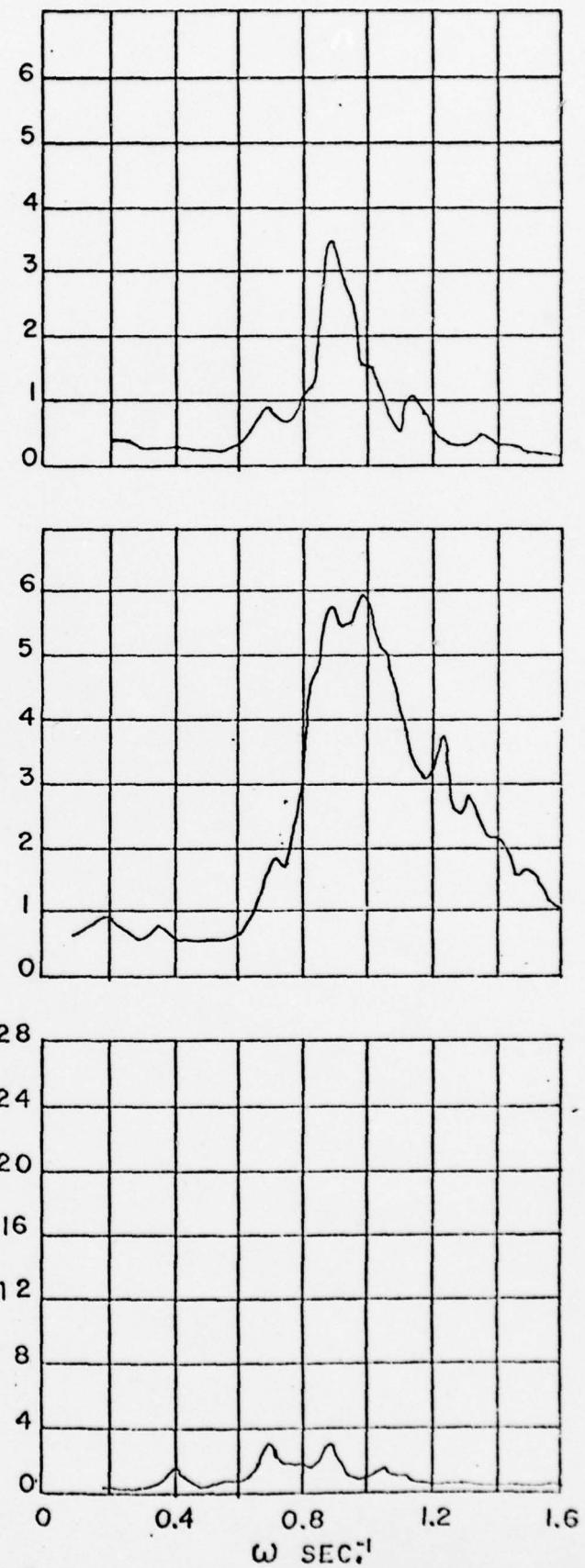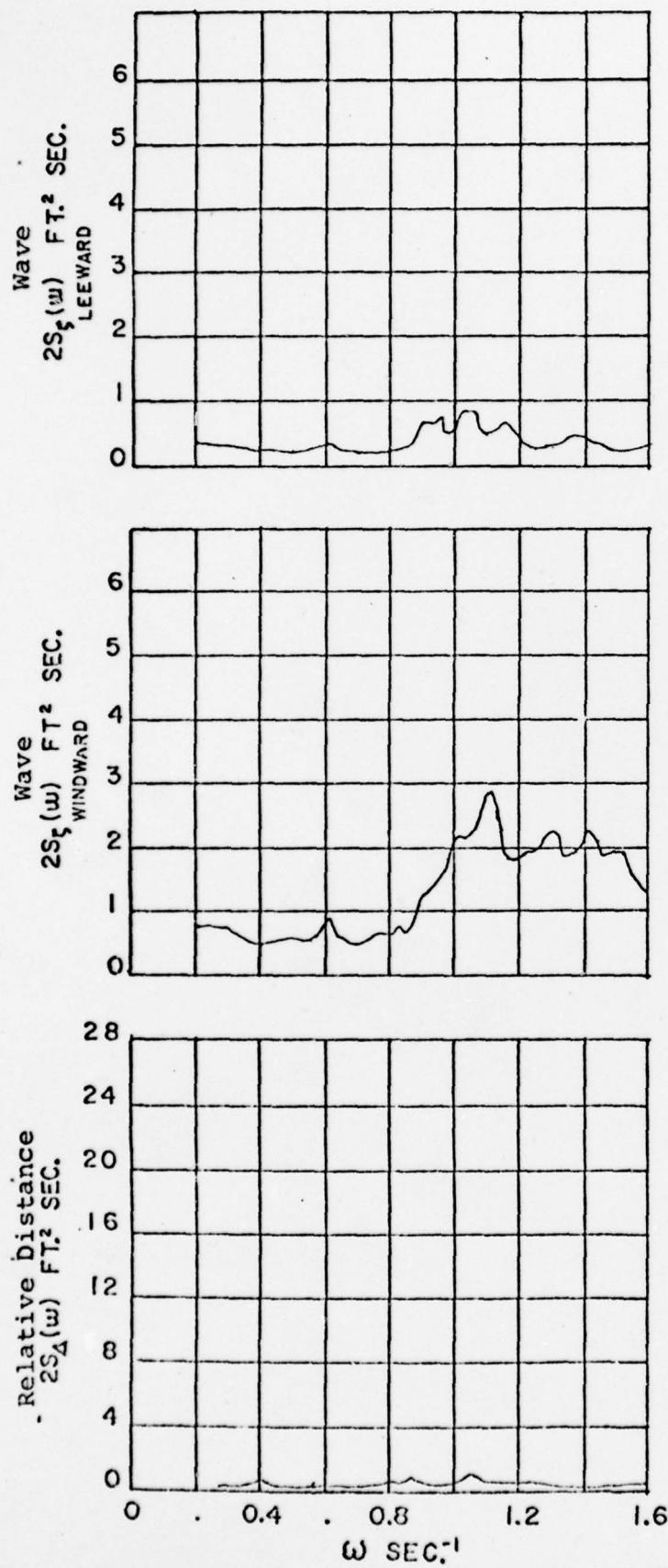
SEA STATE 4 18 kts

FIGURE 5

SKEWED SEAS — LCU TO WINDWARD

SEA STATE 3 15kts   SEA STATE 4 18kts
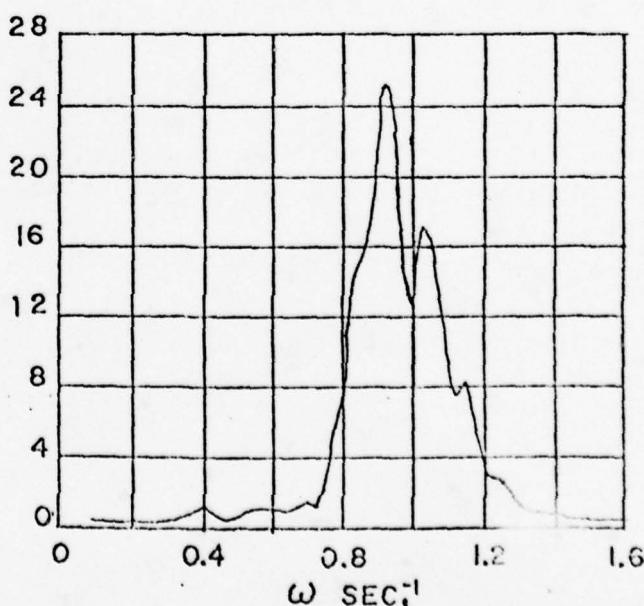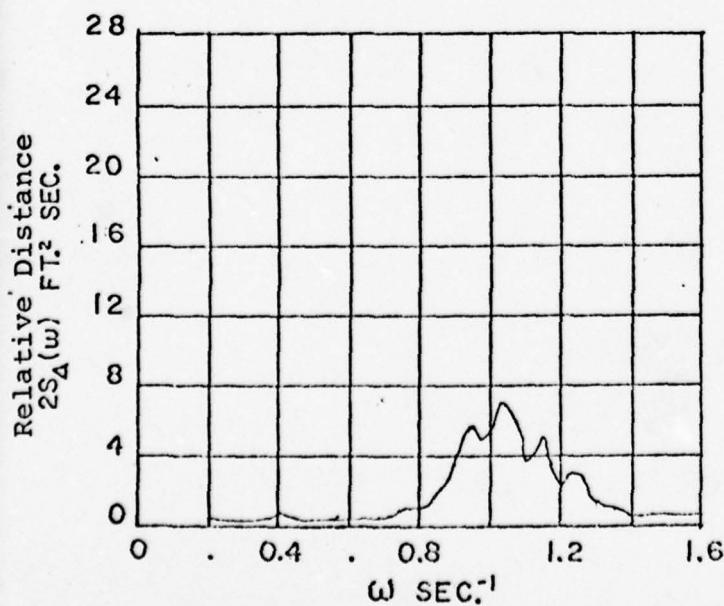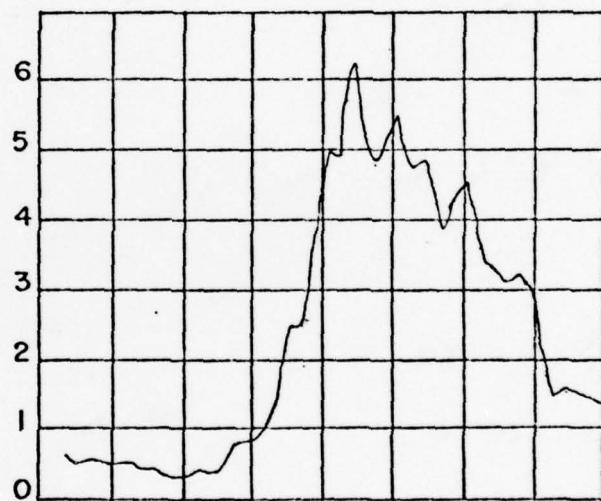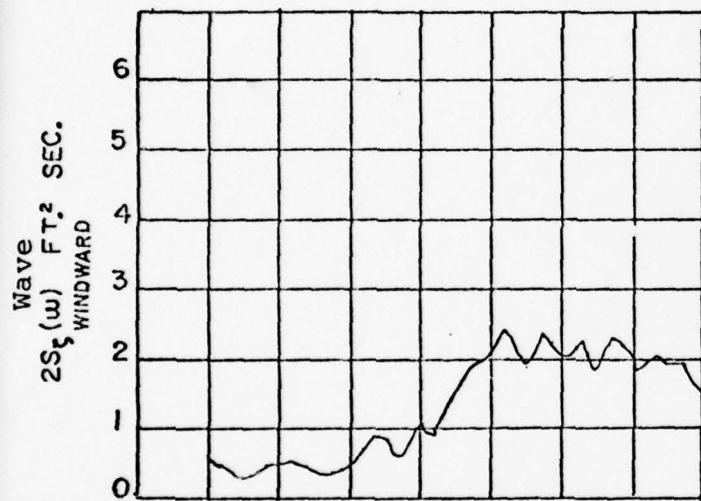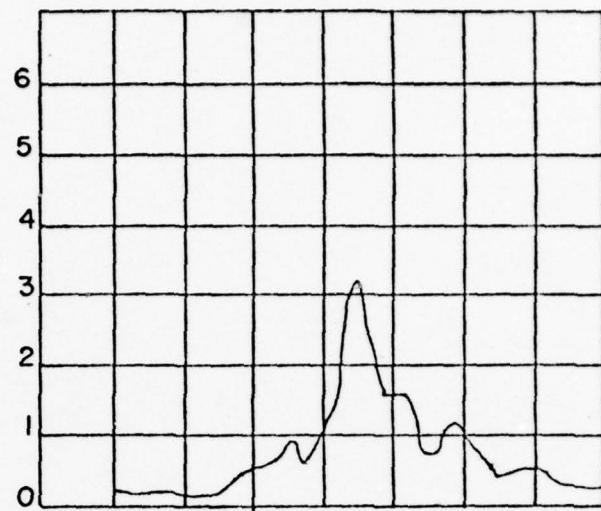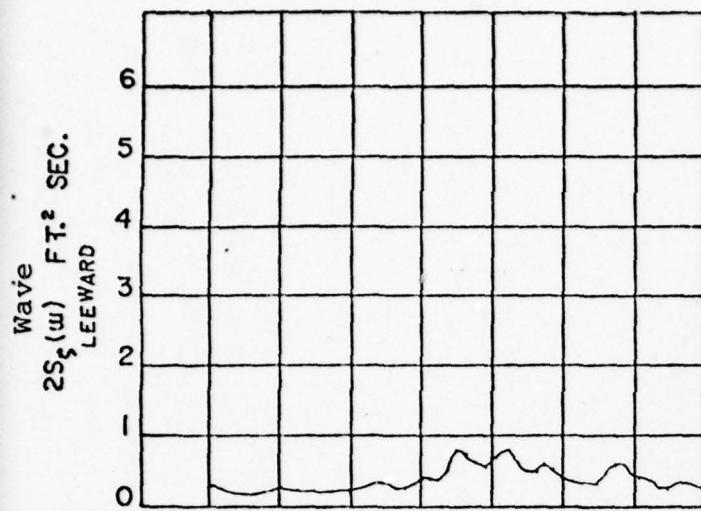
FIGURE 6

HEAD SEAS - LCU TO STARBOARD

SEA STATE 3 15kts

SEA STATE 4 18kts
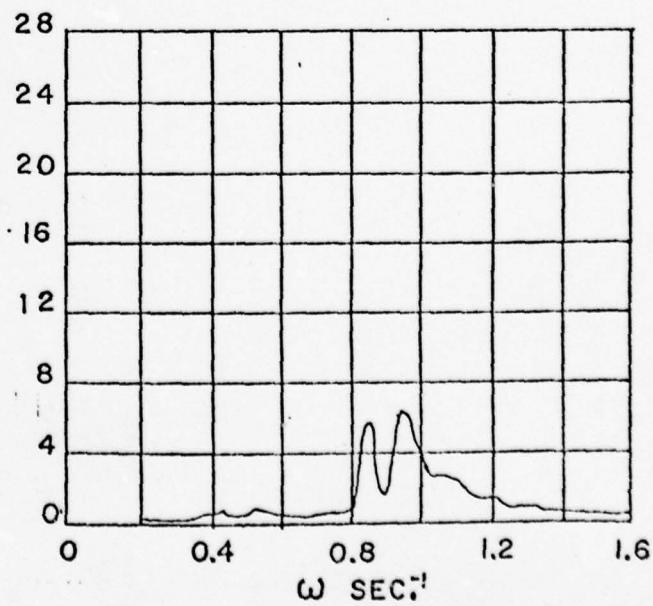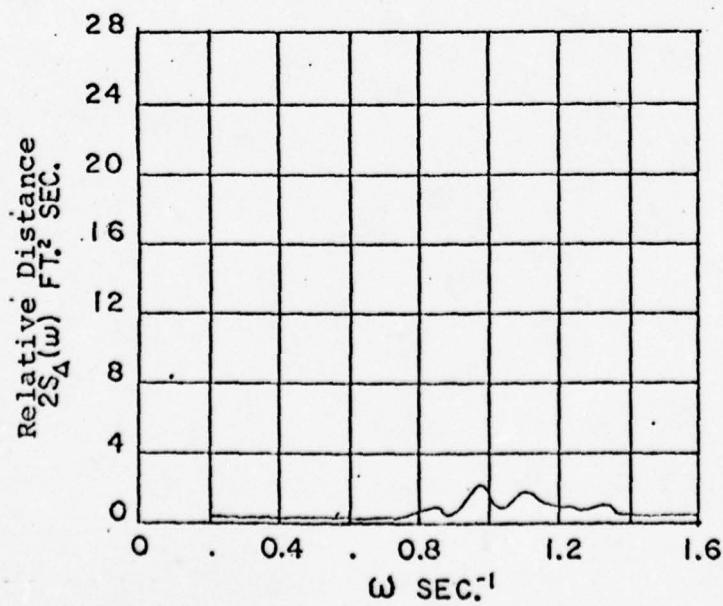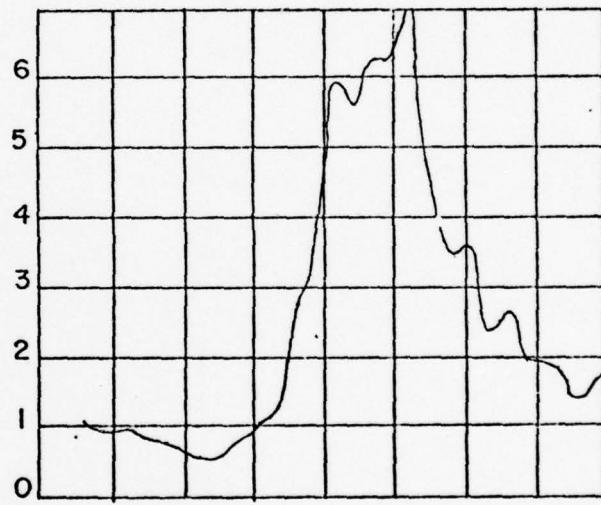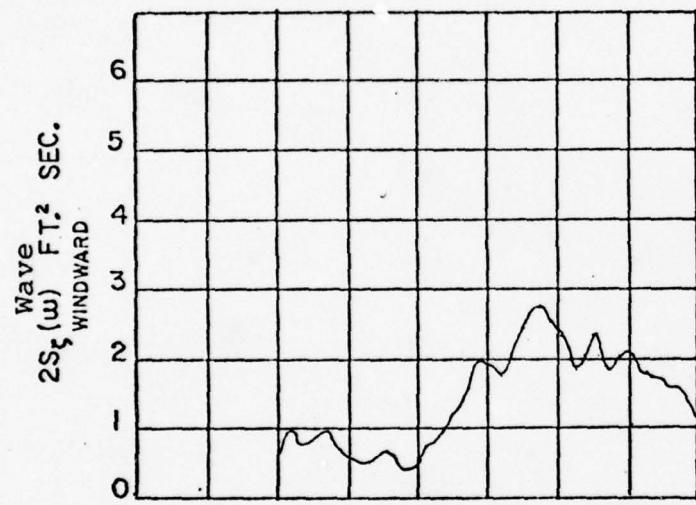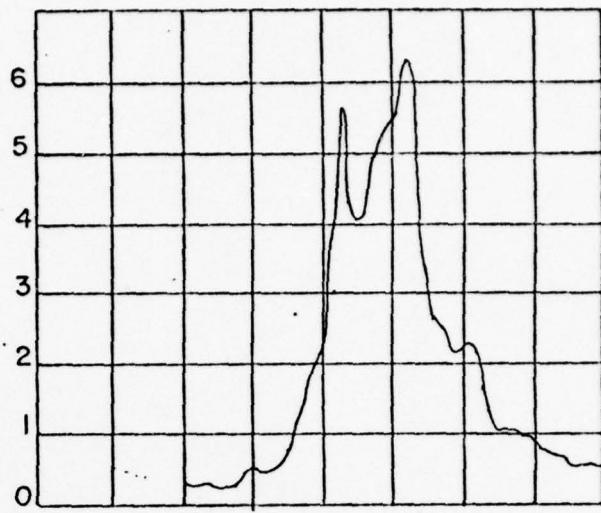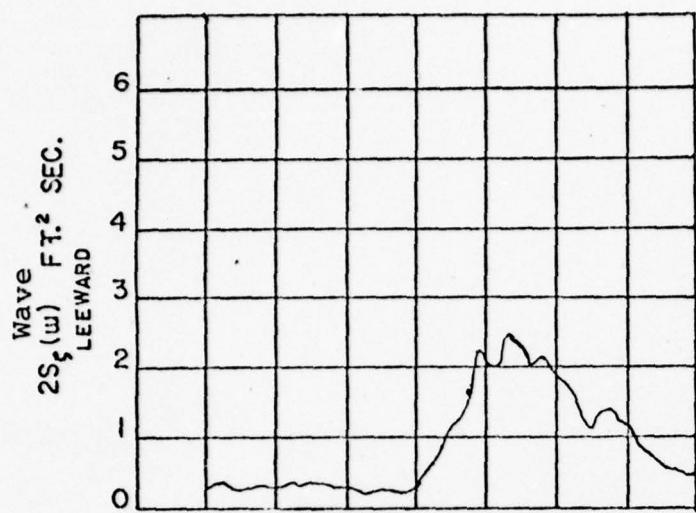
FIGURE 7
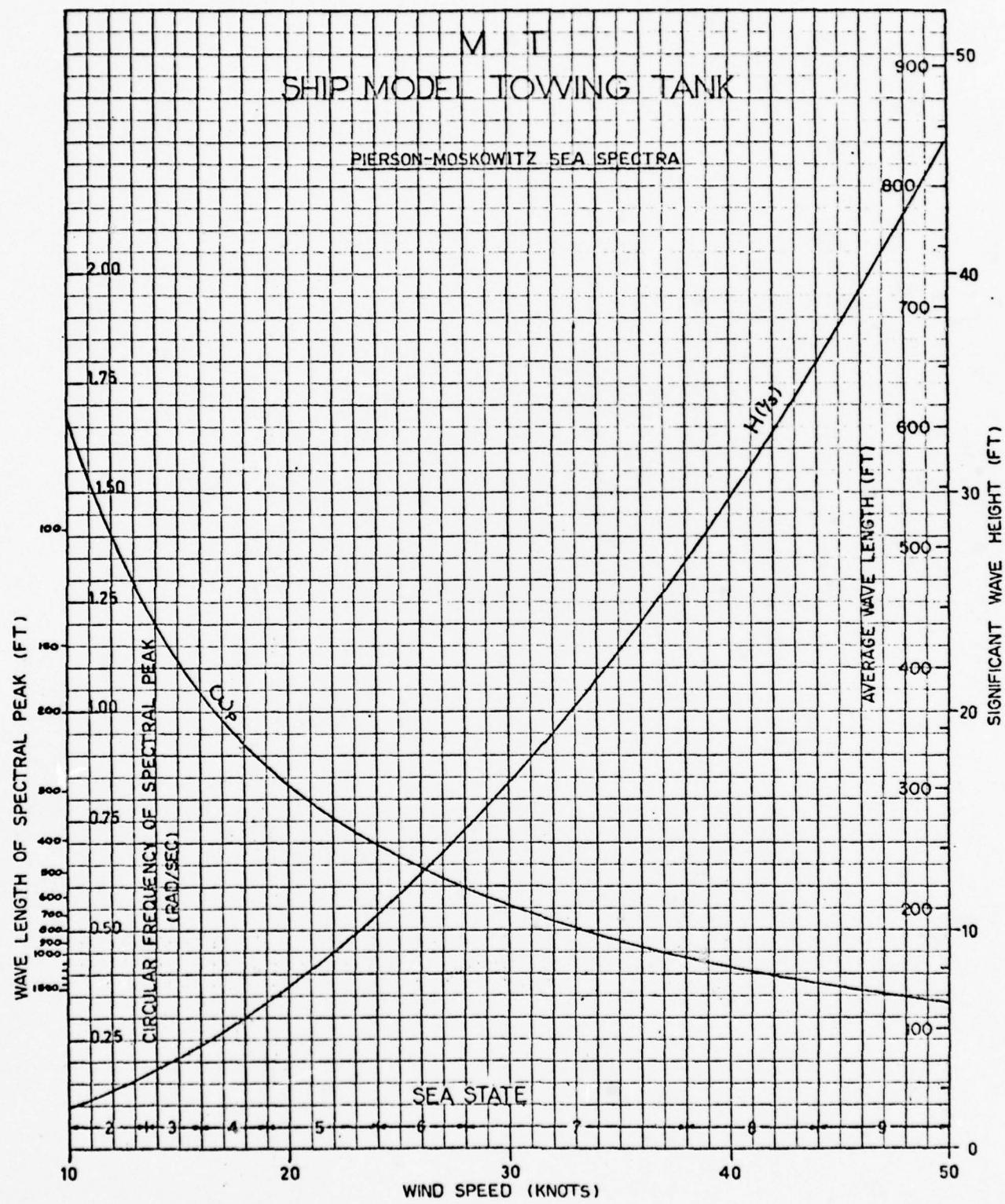
Principal Parameters for Fully Developed Seaways

Figure 8

TEST 11E B-D DISPL

HEAL PEAK = 352.92691CTS
INTEGEN PEAK = 253 CTS
RMS VALUE = 1.13439 PHYSICAL UNITS

-17-

START SUBROUTINE SPECTR FOR

TEST 11E B-D DISPL

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	E(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.00000	4.352234	0.00000	27.855563	1.286848
0.026722	4.223430	0.004253	26.412534	0.582849
0.053440	3.658721	0.008505	23.235746	0.275101
0.080159	2.926452	0.012758	18.387655	0.228254
0.106875	2.010181	0.017010	12.630342	0.190975
0.133555	1.342220	0.021263	8.429853	7.169131
0.160318	0.986686	0.025516	5.861885	0.209362
0.187038	0.829652	0.029768	3.527620	0.399190
0.213758	0.365881	0.034021	2.258856	0.365546
0.240476	0.423145	0.038273	2.658722	0.259733
0.267158	0.470431	0.042526	2.555863	0.179837
0.293518	0.587281	0.046778	3.685956	-0.060238
0.320638	0.625513	0.051031	5.214457	-0.095396
0.347357	1.121351	0.055284	6.520242	-0.044837
0.374077	1.725420	0.055936	10.641133	0.098027
0.400797	2.568268	0.063789	16.136562	0.094349
0.427517	2.236424	0.068041	14.051868	0.095031
0.454237	1.120002	0.072294	6.511518	0.044550
0.480956	0.620207	0.076547	3.656878	0.005956
0.507676	2.534814	0.080755	3.360333	-0.037664
0.534356	0.453924	0.085052	3.103417	-0.105384
0.561116	0.478705	0.089304	3.007752	-0.057142
0.587836	0.377575	0.093557	2.374885	0.019826
0.614555	0.344386	0.097809	2.163864	0.009676
0.641275	0.620465	0.102062	3.797564	0.099162
0.667995	0.686675	0.106315	5.579539	0.023078
0.694715	0.780053	0.110567	4.501217	-0.051838
0.721434	0.573507	0.114820	3.603453	-7.182243
0.748154	0.533160	0.119072	3.349541	-0.054346
0.774874	2.551886	0.123325	3.275863	0.012754
0.801594	0.456225	0.127578	3.130337	0.002800
0.828314	0.562572	0.131830	3.537255	0.044654
0.855034	0.712443	0.136083	4.476414	0.012287
0.881753	0.617707	0.140335	5.137806	0.014652

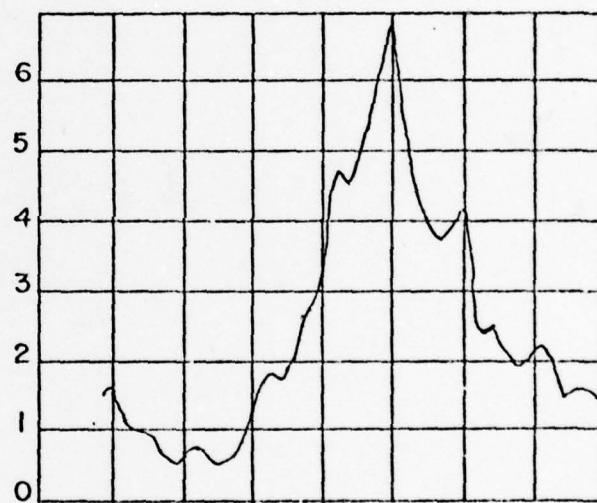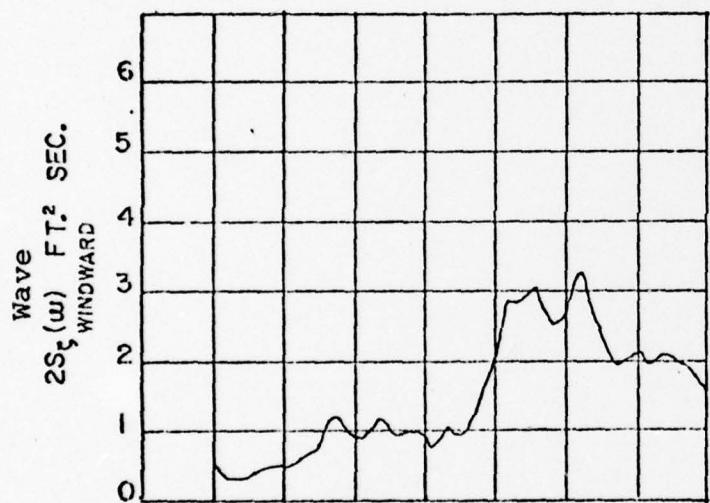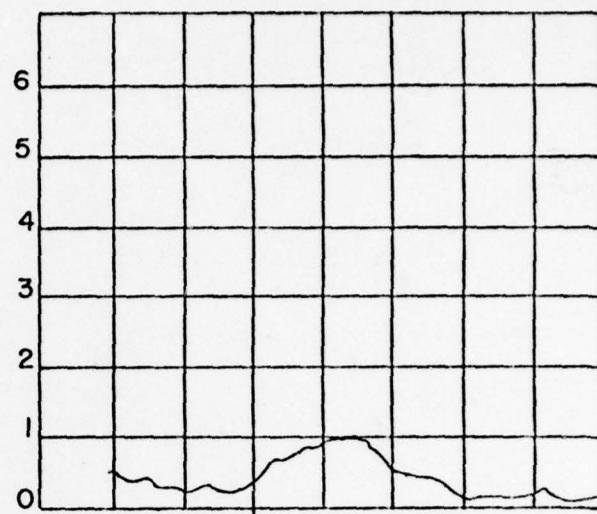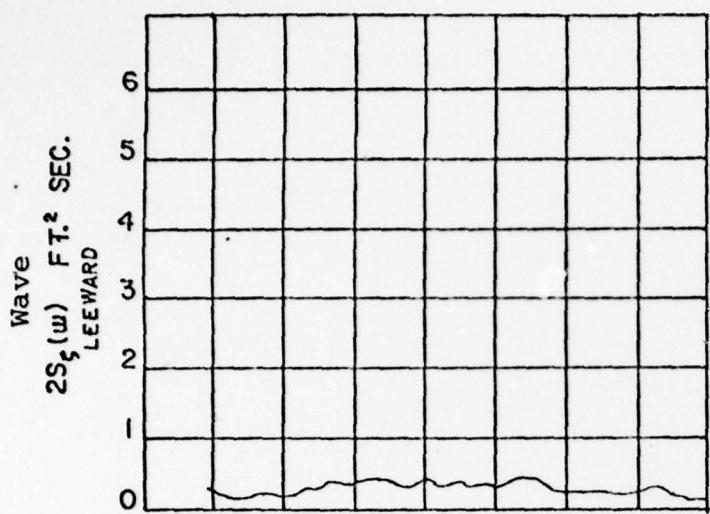| 0.908473 | 0.821388 | 0.144588 | 5.034769 | -0.014180 |
0.935193	0.721644	0.148841	4.408557	-0.008715
0.961513	0.584715	0.153053	3.673858	-0.052699
0.988632	0.465246	0.157346	2.548361	0.005877
1.015352	0.416841	0.161598	2.581388	0.004760
1.042072	0.335583	0.165851	2.108531	0.094193
1.068751	0.216445	0.170103	1.355905	0.043099
1.095511	0.182239	0.174356	1.143764	0.013037
1.122231	0.238517	0.178625	1.561158	-0.037250
1.148952	0.316953	0.182861	1.591477	-7.224365
1.175671	0.336786	0.187114	2.116851	-7.017843
1.202351	0.362565	0.151366	2.086267	0.004611
1.225111	0.435565	0.155615	2.761768	0.228428
1.255822	0.355576	0.155872	2.255280	0.047970
1.282550	0.652664	0.204124	1.838236	0.012353
1.305278	0.444441	0.208377	2.541176	-0.030976
1.335552	0.534684	0.212625	3.355520	-7.039100
1.362765	0.474845	0.216882	2.583562	-0.271069
1.385425	0.365836	0.221135	2.258615	-0.202156
1.416145	0.325464	0.225387	2.044550	0.033054
1.442865	0.264788	0.225640	1.663714	0.024395
1.465588	0.211559	0.233892	1.385517	0.009221
1.456378	0.166713	0.238145	1.060090	-0.003021
1.523028	0.185953	0.242397	1.242712	-0.021169
1.545747	0.222447	0.246650	1.422806	-0.012456
1.576468	0.248206	0.250903	1.555585	0.000284
1.603188	0.237775	0.255155	1.553562	0.014441

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(0.01376)
    ZEROTH MOMENT = 1.20622
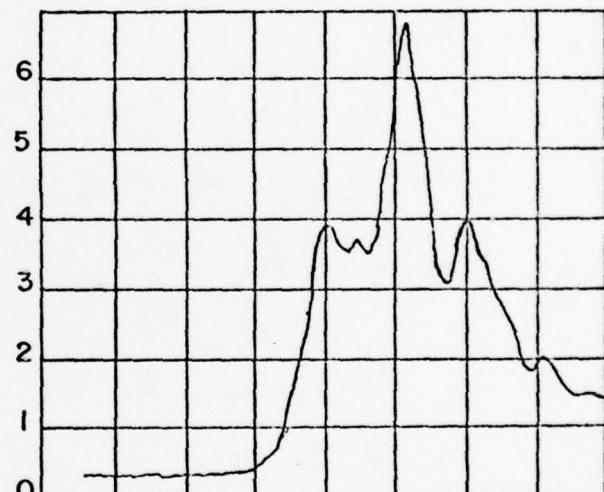   SECOND MOMENT = 0.00347
    FOURTH MOMENT = 0.00007
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) = 0.92675

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.0*RMS = 4.53757
        4.0*RMS*SQRT(1-PHYSICAL**M2/M0) = 3.42749

TABLE 1

TEST115 HAWKINS

REAL MEAN =   11453.8250CCTS
INTEGER MEAN =   11454 CTS
RMS VALUE   1.55134 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST115 HAWKINS

-18-

VELOCITY =   0.00000 FPS
LAGS   = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	3.686452	0.000000	23.162918	2.406643
0.026722	2.652741	0.004253	16.667664	-0.672123
0.053444	1.250154	0.008525	8.106524	0.183237
0.080155	1.112756	0.012758	6.551651	0.442744
0.106875	1.363861	0.017012	8.054674	-0.134478
0.133595	1.245185	0.021263	7.848858	0.316290
0.160315	0.616665	0.025516	5.131283	0.380888
0.187035	0.681076	0.029768	3.776684	-0.026239
0.213758	0.520511	0.034021	3.144824	0.065186
0.240476	0.350855	0.038273	2.456067	0.118660
0.267198	0.327428	0.042526	2.057289	0.044182
0.253518	0.336455	0.046778	2.076327	0.015640
0.320636	0.385158	0.051031	2.445403	0.088656
0.347357	0.445648	0.055284	2.800087	0.084375
0.374077	0.475344	0.055536	3.011806	-0.071098
0.400797	0.465352	0.063785	2.523850	0.116160
0.427517	0.502974	0.068041	3.160281	0.024523
0.454237	0.622085	0.072294	3.546373	0.027651
0.480956	0.655564	0.076547	4.115033	0.144473
0.507676	0.776552	0.080755	4.879217	0.033900
0.534396	1.113386	0.085052	6.955575	0.072604
0.561116	1.170558	0.089304	7.354784	0.057918
0.587836	0.565423	0.093557	6.265531	0.046554
0.614555	0.566034	0.097805	5.692781	0.139287
0.641275	0.565754	0.102062	6.053355	0.050543
0.667995	1.110078	0.106315	6.574776	0.114702
0.694715	1.064754	0.110567	6.692255	0.078413
0.721434	0.853763	0.114820	5.615679	0.019153
0.748154	0.521715	0.119072	5.751331	0.133117
0.774874	0.597078	0.123325	6.264788	0.131810
0.801594	0.566305	0.127578	5.656907	0.052550
0.828314	0.767524	0.131830	4.558669	0.065636
0.855034	0.872875	0.136083	5.484462	0.024002
0.881753	1.006736	0.140335	6.325507	0.064900

0.908473	0.549971	0.144588	5.568846	0.084241
0.935193	1.026347	0.148841	6.448730	0.024483
0.961913	1.443190	0.153093	5.867827	0.030953
0.988632	1.828745	0.157346	11.450342	0.085377
1.015352	2.371853	0.161598	14.902790	-0.244881
1.042072	2.618094	0.165851	17.656342	0.019850
1.068751	2.801657	0.170103	17.603577	-0.004858
1.095511	2.958541	0.174356	18.551883	0.100545
1.122231	3.051784	0.178605	19.174527	-0.064459
1.148952	2.735664	0.182861	17.188650	0.118298
1.175671	2.531884	0.187114	15.588257	-0.040378
1.202351	2.663235	0.191366	16.670776	-0.035889
1.229111	3.070864	0.195619	19.254800	0.062607
1.255830	3.227320	0.199872	20.277847	0.057875
1.282550	2.840426	0.204124	17.846524	0.028082
1.309270	2.428018	0.208377	15.285648	-0.240017
1.335990	2.160203	0.212629	13.572955	0.051040
1.362705	1.504128	0.216882	12.340577	-0.028980
1.389425	2.048445	0.221135	12.870781	0.112727
1.416145	2.140018	0.225387	13.446132	-0.002016
1.442865	1.571313	0.229640	12.388127	0.065522
1.469588	2.075951	0.233892	13.043834	-0.047210
1.496308	1.851656	0.238145	16.895544	0.062118
1.523026	1.620822	0.242397	11.622822	0.156110
1.545747	1.518254	0.246650	12.254055	-0.027534
1.576468	1.012933	0.250903	11.385337	-0.014721
1.603188	1.586875	0.255155	9.983154	0.135717

ERRORS   5552 (26ABR)   3358 (17FOR)

ARU1 AT 62CC

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.02335)
      ZEROTH MOMENT =   2.42664
      SECOND MOMENT =   0.79632
      FOURTH MOMENT =   4.45566
      BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4)) =   0.84996

SIGNIFICANT WAVE HEIGHT, H(1/3)
      A*FCHFS =   0.10532

TABLE 2

REAL MEAN = 6963.76593CTS
INTEGER MEAN = 6964 CTS
RMS VALUE = 8.72881 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST 115 WAVLEE

VELOCITY = 0.88888 FPS
LAGS = 88
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55559

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.00000	1.528555	0.00000	12.117717	0.529993
0.026720	1.256238	0.004253	7.925741	0.078574
0.053440	0.454367	0.008505	3.186199	0.005739
0.082155	0.453728	0.012758	3.102166	0.091585
0.106875	0.464557	0.017010	3.675642	0.086449
0.133555	0.473228	0.021263	2.973379	0.086273
0.162315	0.335286	0.025516	2.131799	0.084118
0.187035	0.685538	0.029768	1.819219	0.054507
0.213755	0.265555	0.034021	1.444873	0.016370
0.240475	0.174205	0.038273	1.054562	0.060036
0.267158	0.146158	0.042526	0.518339	0.021744
0.293518	0.153956	0.046778	0.567585	0.041487
0.322638	0.156688	0.051031	1.158131	0.033535
0.347357	0.204512	0.055284	1.416653	0.024270
0.374877	0.212427	0.055536	1.322151	0.012818
0.400757	0.172361	0.063785	1.082978	0.039631
0.427517	0.157786	0.068041	1.242725	0.023100
0.454237	0.254482	0.072294	1.558557	0.038316
0.480856	0.265165	0.076547	1.666125	0.044255
0.507676	0.257995	0.080799	1.872380	0.027506
0.534356	0.308028	0.085052	2.351557	0.056293
0.561116	0.351768	0.089304	2.461523	0.031772
0.587836	0.388183	0.093557	2.388755	0.031597
0.614555	0.423538	0.097809	2.535505	0.037220
0.641275	0.395658	0.102062	2.485594	0.050293
0.667955	0.445637	0.106315	2.546656	0.034763
0.694715	0.382283	0.110567	2.400721	0.043184
0.721434	0.328511	0.114820	2.066611	0.042220
0.748154	0.325754	0.119072	2.071506	0.056801
0.774874	0.367651	0.123325	2.318272	0.055381
0.801555	0.387616	0.127578	2.435465	0.041297
0.828314	0.353501	0.131830	2.221111	0.043097
0.855034	0.315708	0.136083	1.983600	0.037168
0.881753	0.317737	0.140335	1.956400	0.044582

0.908473	0.346445	0.144588	2.176776	0.031733
0.935153	0.352819	0.148841	2.216825	0.047946
0.961913	0.353856	0.153093	2.223340	0.042654
0.988632	0.366251	0.157346	2.301226	0.035784
1.015352	0.367350	0.161598	2.308125	0.025817
1.042072	0.368882	0.165851	2.443406	0.019944
1.068751	0.435683	0.170103	2.738734	0.018448
1.095511	0.438020	0.174356	2.752159	0.025497
1.122231	0.384158	0.178609	2.413584	0.033594
1.148952	0.300265	0.182861	1.886649	0.024300
1.175671	0.224888	0.187114	1.413013	0.010191
1.202351	0.202154	0.191366	1.270173	0.014286
1.229111	0.215646	0.195619	1.354546	0.018354
1.255832	0.242754	0.199872	1.525266	0.022133
1.282552	0.245011	0.204124	1.535449	0.033863
1.309272	0.215010	0.208377	1.376078	0.010177
1.335992	0.218367	0.212629	1.372042	0.018236
1.362709	0.216367	0.216882	1.365476	0.019676
1.389425	0.213504	0.221135	1.341482	0.040395
1.416145	0.245171	0.225387	1.565585	0.037416
1.442865	0.325826	0.229640	1.521562	0.019452
1.469588	0.318598	0.233892	1.951492	0.016777
1.456308	0.224117	0.238145	1.402167	0.032286
1.523028	0.150638	0.242397	0.546465	0.069663
1.549747	0.125315	0.246650	0.812536	0.017958
1.576466	0.115681	0.250903	0.781977	0.021966
1.603188	0.116596	0.255155	0.735169	0.030559

ERROR=55 .55E (26A2R) .33FE (17FER)
A461 AT 82CC

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.48315)
    ZEROTH MOMENT = 0.88595
    SECOND MOMENT = 0.36622
    FOURTH MOMENT = 0.54813
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) = 0.78675

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4*RMS = 2.51208

TABLE 3

TEST 118 B-C DISP

```
REAL  PEAK  =        533.7887ACTS
INTEGER PEAK =        534 CTS
RMS VALUE  =          1.85521 PHYSICAL UNITS
```

START SUBROUTINE SPECTR FOR

TEST 118 B-C DISP

```
VELOCITY  =   0.78888 FPS
LAGS  =  60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55559
```

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	2.277566	0.000000	14.310369	3.441857
0.026720	1.442626	0.004253	8.983851	1.792962
0.053440	0.564372	0.008525	3.546855	-0.250140
0.080159	0.677637	0.012758	4.257721	-1.380972
0.106875	0.755810	0.017010	5.000222	-1.801189
0.133555	0.735001	0.021263	4.643275	-1.596902
0.160315	0.676186	0.025516	4.246601	-0.404493
0.187035	0.810043	0.029768	5.085649	1.279658
0.213758	0.570047	0.034021	8.854587	2.201655
0.240478	1.115661	0.038273	7.035035	1.531520
0.267158	1.386577	0.042526	8.211580	0.259282
0.293518	1.803671	0.046778	11.332798	-1.051225
0.320638	2.240648	0.051031	14.076354	-1.755475
0.347357	7.672813	0.055284	48.205722	-1.394324
0.374077	24.300104	0.059536	152.053726	-0.227954
0.400797	30.164215	0.063789	185.853030	0.976596
0.427517	15.104232	0.068041	94.521428	1.633932
0.454237	3.593435	0.072294	22.578217	1.390890
0.480956	1.455831	0.076547	5.358580	0.417037
0.507676	0.875523	0.080755	5.526207	-0.757741
0.534396	0.646075	0.085052	4.055410	-1.466086
0.561116	0.525953	0.089304	3.304512	-1.240304
0.587836	0.535552	0.093557	3.353602	-0.316442
0.614555	0.619647	0.097809	3.893357	0.682073
0.641275	0.874859	0.102062	5.456501	1.358643
0.667995	1.154344	0.106315	7.504292	1.276818
0.694715	1.464575	0.110567	5.202194	0.486997
0.721434	1.800055	0.114820	11.310105	-0.486706
0.748154	2.032515	0.119072	12.770655	-1.130848
0.774874	1.587540	0.123325	12.468083	-1.042879
0.801594	1.554515	0.127578	12.531534	-0.378209
0.828314	1.528857	0.131830	12.115365	0.446557
0.855034	1.568121	0.136083	12.366066	1.096485
0.881753	2.018431	0.140335	12.682174	1.124510

0.908473	1.585853	0.144588	5.564468	0.536519
0.935193	1.101924	0.148841	6.923466	-0.275644
0.961913	2.062187	0.153053	5.417281	-0.834480
0.988632	0.556855	0.157346	3.750173	-0.929384
1.015352	0.358605	0.161558	2.584507	-0.490020
1.042072	0.388906	0.165851	2.442537	0.268253
1.068751	2.363641	0.170103	8.284824	0.842868
1.095511	0.266011	0.174356	1.671399	0.872141
1.122231	0.317792	0.178685	1.556749	0.523600
1.148552	0.499370	0.182861	3.137632	-0.048117
1.175671	0.625547	0.187114	3.565561	-0.568635
1.202351	0.613675	0.191366	3.855861	-0.787091
1.229111	0.455604	0.195619	8.862645	-0.480757
1.255830	0.365690	0.199872	8.382829	0.116296
1.282550	0.385328	0.204124	8.421084	0.619811
1.309270	0.345551	0.208377	8.173673	0.720382
1.335990	0.251238	0.212625	1.578577	0.518119
1.362709	0.185141	0.216882	1.163272	0.073991
1.389429	0.165432	0.221135	1.064569	-0.414243
1.416149	0.155288	0.225387	1.608795	-0.651258
1.442865	0.156372	0.229640	0.583514	-0.485458
1.469588	0.188445	0.233892	1.184037	-0.013586
1.496328	0.246132	0.238145	1.546454	0.524056
1.523028	0.357166	0.242398	1.543161	0.654655
1.549748	0.362248	0.246650	1.663757	0.581592
1.576468	0.356559	0.250903	2.556518	-0.148935
1.775188	0.286559	0.255155	2.566655	-0.290752

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.55551)
```
        ZEROTH MOMENT =        3.44166
        SECOND MOMENT =        0.88787
        FOURTH MOMENT =        0.36588
        BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) =        0.65797

        SIGNIFICANT WAVE HEIGHT, H(1/3)
            4.0*RMS =        7.42884
            4.0*RMS*SQRT(1-0*BROAD**2/2*N) =        6.86339
```

TABLE 4

TEST 118 HAWKINS

REAL PEAK =   11866.267631CTS
INTEGER PEAK =   11866 CTS
RMS VALUE   1.97166 PHYSICAL UNITS

START SMOOTHING SPECTR FOR

TEST 118 HAWKINS

VELOCITY =   0.00000 FPS
LAGS   =   80
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55559

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	5.621672	0.000000	35.382006	7.865256
0.026760	3.362675	0.004253	21.128326	-0.841212
0.053440	1.833697	0.008525	6.454918	-0.820486
0.080215	1.045926	0.012758	6.556752	1.276263
0.106875	1.055655	0.017010	6.884206	0.269440
0.133555	0.545491	0.021263	5.940655	-0.351360
0.160315	1.025555	0.025516	6.443780	0.165279
0.187035	1.455618	0.029768	5.135657	0.208202
0.213750	1.588658	0.034021	5.475425	-0.054083
0.240470	1.158958	0.038273	7.533529	0.119901
0.267150	1.025598	0.042526	6.465114	0.163590
0.293510	0.973580	0.046778	6.117106	0.105510
0.320635	0.885553	0.051031	5.589223	0.075184
0.347357	0.665745	0.055284	4.145301	0.245738
0.374077	0.545586	0.059536	3.428016	0.082515
0.400757	0.564058	0.063789	3.544081	0.159666
0.427517	0.556242	0.068041	3.746257	0.298349
0.454237	0.740082	0.072294	4.650071	-0.034140
0.480956	0.721305	0.076547	4.532115	2.049956
0.507676	0.575012	0.080799	3.638242	0.266591
0.534356	0.561996	0.085052	3.532455	0.122900
0.561116	0.615593	0.089324	3.870400	0.034024
0.587836	0.818395	0.093557	5.142129	0.169475
0.614555	1.237650	0.097809	7.777641	0.065705
0.641275	1.654432	0.102062	10.395092	0.055733
0.667955	1.812678	0.106315	11.389354	0.043933
0.694715	1.789220	0.110567	11.242000	0.161442
0.721434	2.035590	0.114820	12.792500	0.146744
0.748154	2.502516	0.119072	15.726286	0.012485
0.774874	2.757581	0.123324	17.326285	0.243579
0.801594	3.372356	0.127578	21.189392	0.128796
0.828314	4.384815	0.131830	27.550558	0.158083
0.855034	4.693748	0.136083	29.451184	0.191734
0.881753	4.526553	0.140335	28.443680	0.063933

0.508473	4.764816	0.144588	30.063889	0.169887
0.535153	5.127743	0.148841	32.218552	0.254109
0.561513	5.656156	0.153093	35.551458	0.018429
0.588632	6.605786	0.157346	41.530502	0.077859
0.615352	6.501573	0.161558	40.850586	0.121085
0.642072	5.565792	0.165851	34.996017	0.175139
0.668751	4.561164	0.170103	31.171921	0.027728
0.695511	4.413373	0.174356	27.730042	0.062845
1.122231	4.015427	0.178609	25.229675	0.218634
1.148951	3.741250	0.182861	23.506573	0.088843
1.175671	3.846736	0.187114	24.132065	-0.036583
1.202351	4.117932	0.151366	25.873734	0.207659
1.229111	3.462381	0.155619	21.754776	0.044204
1.255830	2.547614	0.155872	15.975714	0.112129
1.282550	2.430842	0.204124	15.273433	0.285986
1.309270	2.477546	0.208377	15.566878	0.116251
1.335998	2.285406	0.212625	14.384760	0.102888
1.362709	2.057178	0.216882	12.925633	0.170952
1.385425	1.581239	0.221135	12.448493	0.109750
1.416155	2.142550	0.225387	13.462035	0.024265
1.442865	2.203353	0.225648	13.844074	0.104752
1.469585	2.031685	0.233892	12.765452	0.146127
1.496305	1.681194	0.238145	10.563255	0.026033
1.523025	1.493493	0.242397	9.444471	0.143888
1.549745	1.562079	0.247262	9.541571	0.133888
1.576465	1.555888	0.255558	9.855957	0.163588
1.625185	1.355888	0.255658	9.835965	0.167565

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT SI   1.56315)

ZEROTH MOMENT =   3.88886
SECOND MOMENT =   3.87451
FOURTH MOMENT =   0.41771
BROADNESS FACTOR (SQRT(1.0-P2**2/(P0+P4))) =   0.83539

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4.0*RMS =   7.88427
    4.0*RMS*SQRT(1.0-BROAD*0.4/2.0) =   7.55741

TEST 112 WAVLEE

REAL MEAN = 17385.4582SCTS
INTEGER MEAN = 17385 CTS
RMS VALUE 1.32758 FHYSICAL UNITS

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START SELECTING SPECTR FOR

TEST 112 WAVLFE

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	41.548222	0.000000	261.004883	1.763304
0.026720	21.222687	0.004253	133.346069	1.183293
0.053440	0.646654	0.008525	4.025346	0.926619
0.080155	0.420897	0.012758	2.644574	1.197438
0.106875	0.417648	0.017018	2.588125	1.272397
0.133595	0.346623	0.021263	2.158461	1.054930
0.160315	0.402741	0.025518	2.538454	0.831580
0.187035	0.457018	0.029768	3.122887	1.127621
0.213758	0.454345	0.034021	2.854736	1.110696
0.240478	0.384651	0.038273	2.417088	1.106125
0.267158	0.401229	0.042526	2.520558	1.099248
0.293518	0.392386	0.046778	2.465432	1.123731
0.320658	0.361736	0.051031	2.272852	1.098381
0.347357	0.394228	0.055284	1.511522	1.103753
0.374077	0.230141	0.055536	1.446015	1.141887
0.400757	0.203213	0.063785	1.275569	1.105252
0.427517	0.233585	0.068041	1.467660	1.086493
0.454237	0.294545	0.072254	1.853195	1.099057
0.480956	0.321078	0.076547	1.851726	1.109888
0.507676	0.246432	0.080799	1.546377	1.082218
0.534356	0.219368	0.085052	1.378327	1.131875
0.561116	0.245709	0.089304	1.565571	1.097177
0.587836	0.313582	0.093557	1.972805	1.088775
0.614555	0.401594	0.097809	2.523287	1.028265
0.641275	0.535044	0.102062	3.386515	1.082012
0.667995	0.646712	0.106315	4.063410	1.075923
0.694715	0.662154	0.110567	4.160439	1.052576
0.721434	0.750506	0.114820	4.715565	1.087331
0.748154	0.866318	0.119072	5.443235	1.082670
0.774874	0.850784	0.123325	5.345631	1.053660
0.801594	0.851641	0.127578	5.602346	1.091188
0.828314	0.583438	0.131830	6.175121	1.094888
0.855034	0.993829	0.136083	6.244411	1.077966
0.881753	0.954620	0.140335	6.245381	1.087509

0.508473	0.585340	0.144588	6.216806	1.112005
0.535193	0.580015	0.148841	5.565119	1.051236
0.561913	0.823381	0.153093	5.173453	1.082357
0.588632	0.635195	0.157346	4.016204	1.067171
1.015352	0.483348	0.161598	3.036563	1.085835
1.042072	0.405448	0.165851	2.547802	1.084515
1.068751	0.407030	0.170103	2.557445	1.066545
1.095511	0.414011	0.174356	2.601309	1.048617
1.122231	0.388954	0.178609	2.443870	1.064032
1.148952	0.262458	0.182861	1.837568	1.069820
1.175671	0.170080	0.187114	1.066644	1.060738
1.202391	0.123883	0.191366	0.778378	1.049441
1.224111	0.135204	0.195619	0.874644	1.054132
1.255830	0.140043	0.199872	0.879915	1.078493
1.282550	0.123411	0.204124	0.775415	1.073668
1.309270	0.128428	0.208377	0.806535	1.054016
1.335550	0.133865	0.212629	0.841125	1.050965
1.362789	0.131655	0.216882	0.827452	1.068607
1.385429	0.168420	0.221135	0.995380	1.046266
1.416149	0.223043	0.225387	1.401417	1.030988
1.442869	0.233477	0.229640	1.466578	1.050535
1.465588	0.159950	0.233892	1.004596	1.040223
1.496308	0.095848	0.238145	0.602013	1.035271
1.563925	0.072438	0.242357	0.457429	1.055118
1.776188	0.100812	0.266982	0.768655	1.055985

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(0.00000)
      ZEROTH MOMENT = 1.76330
      SECOND MOMENT = 0.08705
      FOURTH MOMENT = 0.00063
      BROADNESS FACTOR (SQRT(1.0*M2**2/(M0*M4))) = 0.97348

      SIGNIFICANT WAVE HEIGHT, H(1/3)
            4.0*M0**.5 = 5.31158

TABLE 6

TEST 213 P-C DISPL

REAL PEAK =   2482.63672CTS
INTEGER PEAK =   2483 CTS
RMS VALUE =   1.47376 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST 213 P-C DISPL

VELOCITY =   0.00000 FPS
LAGS   =   60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.95559

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	0.756246	0.000000	4.764203	2.171962
0.026720	0.555600	0.004253	3.516068	-0.592577
0.053440	0.322010	0.008505	1.939283	-0.710178
0.080155	0.220336	0.012758	1.384411	0.970420
0.106875	0.216662	0.017010	1.361326	-0.346013
0.133595	0.282514	0.021263	1.775286	-0.655581
0.160315	0.316015	0.025516	1.585603	0.503838
0.187035	0.255466	0.029768	1.843225	0.111160
0.213755	0.279356	0.034021	-1.755497	-0.169768
0.240476	0.296668	0.038273	1.864145	0.356362
0.267196	0.304225	0.042526	1.911526	0.074292
0.293916	0.351133	0.046778	2.457561	-0.313060
0.320636	0.608506	0.051031	3.825871	-0.020531
0.347357	0.709585	0.055284	4.561135	0.258555
0.374077	1.256827	0.059536	7.905444	-0.048170
0.400797	1.526533	0.063789	12.127278	0.104629
0.427517	1.733415	0.068041	10.891395	0.103228
0.454237	0.551436	0.072294	6.229378	0.023659
0.480956	0.535085	0.076547	3.362038	0.023483
0.507676	2.272218	0.080799	1.656578	-2.017131
0.534396	0.166472	0.085052	1.022277	-0.036080
0.561116	0.145445	0.089304	0.513868	-0.106991
0.587836	0.141089	0.093557	0.886689	0.114244
0.614555	0.157805	0.097809	0.951521	0.163012
0.641275	0.170532	0.102062	1.071484	-0.063559
0.667995	0.270135	0.106315	1.657331	-0.037673
0.694715	0.742164	0.110567	4.650586	0.093114
0.721434	1.147824	0.114820	7.211592	0.011503
0.748154	0.880252	0.119072	5.530786	-0.156538
0.774874	0.611158	0.123325	3.842212	0.043928
0.801594	0.823155	0.127578	5.277809	0.119435
0.828314	1.282192	0.131830	7.553556	-0.085171
0.855034	1.744028	0.136083	10.558051	0.082906
0.881753	2.275552	0.140335	14.297713	0.137886

0.908473	2.423656	0.144588	15.228882	-0.219596
0.935193	2.820381	0.148841	17.555306	-0.019985
0.961913	4.564133	0.153093	28.802563	0.176653
0.988632	6.116714	0.157346	38.432449	-0.145850
1.015352	5.471254	0.161598	34.376907	-0.063426
1.042072	4.554605	0.165851	31.382050	0.236024
1.068791	5.501547	0.170103	34.567230	-3.021542
1.095511	4.665211	0.174356	29.337524	-0.043522
1.122231	3.406773	0.178609	21.405380	0.104519
1.148952	2.585155	0.182861	18.756561	-0.115391
1.175671	2.346105	0.187114	14.741010	-0.046643
1.202391	1.643223	0.151366	10.324673	0.091592
1.229111	1.442643	0.195619	9.066552	-0.015949
1.255830	1.429054	0.199872	8.553876	-0.007344
1.282550	1.345728	0.204124	8.480571	0.094617
1.309270	1.057881	0.208377	6.658151	0.017124
1.335990	0.771530	0.212629	4.847668	-0.014597
1.362709	0.646655	0.216882	4.063051	-0.025034
1.389429	0.683645	0.221135	4.255467	-0.020645
1.416149	0.764254	0.225387	4.425212	0.028195
1.442869	0.726783	0.229640	4.442850	0.044649
1.469588	0.643838	0.233892	4.045316	0.010249
1.496308	0.523357	0.238145	3.288602	0.015316
1.523028	0.520725	0.242357	3.271838	0.030687
1.549747	0.565895	0.246650	3.551758	-0.017879
1.576468	0.563656	0.250903	3.541804	-0.013987
1.603188	0.565353	0.255155	3.489384	-0.009029

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.40319)
    ZEROTH MOMENT =   2.17156
    SECOND MOMENT =   0.19374
    FOURTH MOMENT =   2.83638
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) =   0.46778

    SIGNIFICANT WAVE HEIGHT, H(1/3)
       4.0*RMS =   5.89083
       4.0*RMS*SQRT(1-BROADNESS**2/2.0) =   5.66321

TABLE 7

TEST 215 WAVEINC

MEAL MEAN =   10183.000000CTS
INTEGER MEAN =   10184 CTS
NPB VALUE =   1.33484 PHYSICAL UNITS

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START SUBROUTINE SPECTR FOR

TEST 215 WAVEINC

VELOCITY =   0.000000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55559

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCORR
0.000000	2.824386	0.000000	17.745636	1.781810
0.026728	1.675633	0.004253	10.553446	-0.737223
0.053440	0.457475	0.008505	2.874400	0.142097
0.080155	0.415180	0.012758	2.608654	0.069374
0.106875	0.501223	0.017010	3.149275	-0.181597
0.133555	0.452830	0.021263	3.056540	0.061628
0.160315	0.367810	0.025516	2.311018	0.211195
0.187035	0.332553	0.029768	2.085454	0.018528
0.213752	0.330127	0.034021	2.074122	0.042388
0.240478	0.257285	0.038273	1.616567	0.073386
0.267156	0.237898	0.042526	1.454757	0.123691
0.293918	0.254131	0.046778	1.596750	-0.034918
0.320638	0.273503	0.051031	1.728584	0.099692
0.347357	0.315207	0.055284	1.586507	0.102274
0.374077	0.313503	0.059536	1.572388	-0.061929
0.400757	0.291885	0.063789	1.833564	0.140642
0.427517	0.000000	0.068041	1.755671	0.095472
0.454237	0.267880	0.072294	1.678113	-0.062466
0.480956	0.280222	0.076547	1.760690	0.210944
0.507676	0.284038	0.080755	1.784666	-0.031148
0.534396	0.273247	0.085052	1.716859	0.111560
0.561116	0.305517	0.089304	1.922132	0.054704
0.587836	0.323175	0.093557	2.034570	0.035123
0.614555	0.303435	0.097809	1.906564	0.131124
0.641275	0.305765	0.102062	1.921201	0.000648
0.667995	0.331993	0.106315	2.085574	0.077743
0.694715	0.316534	0.110567	1.988843	0.123655
0.721434	0.305372	0.114820	1.918711	0.006969
0.748154	0.371743	0.119072	2.335730	0.107829
0.774874	0.422485	0.123325	2.654551	0.048261
0.801594	0.463656	0.127578	2.913237	0.107359
0.828314	0.577812	0.131830	3.630458	0.032744
0.855034	0.756565	0.136083	5.004588	0.035274
0.881753	1.000450	0.140335	6.286849	0.136023
0.508473	0.953873	0.144588	5.953358	0.041656
0.535153	0.565357	0.148841	6.090582	-0.020933
0.561913	1.563489	0.153093	9.823650	0.159516
0.588632	2.182534	0.157346	13.713266	-0.002232
1.015352	2.285225	0.161598	14.155152	0.012619
1.042072	2.573514	0.165851	16.165861	0.118357
1.068751	2.916952	0.170103	18.328003	0.039665
1.095511	2.454591	0.174356	15.673975	-0.044024
1.122231	2.206194	0.178609	13.861924	0.157437
1.148952	2.145520	0.182861	13.505832	-0.061902
1.175671	1.804575	0.187114	11.338502	0.053173
1.202391	2.014625	0.191366	12.658289	0.095387
1.229111	2.834797	0.195619	17.811554	0.051001
1.255830	3.112840	0.199872	19.558548	0.053144
1.282550	2.630231	0.204124	16.528230	0.084870
1.309270	1.800733	0.208377	11.816951	0.028375
1.335990	1.475845	0.211629	5.294355	0.063621
1.362709	1.602620	0.216882	10.069559	0.051095
1.389429	1.705197	0.221135	11.053362	0.085866
1.416149	1.808555	0.225387	11.363735	-0.026173
1.442869	1.741771	0.229640	10.543868	0.096774
1.469588	1.544121	0.233852	5.701557	0.032192
1.496308	1.415518	0.238145	8.581608	0.044251
1.523028	1.427626	0.242397	8.566267	0.099822
1.549747	1.430591	0.246660	8.551182	0.009372
1.576468	1.744995	0.250903	10.964128	0.258790
1.603188	2.072510	0.255155	13.024479	0.080569

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(10.023551)
    ZEROTH MOMENT =   1.78181
    SECOND MOMENT =   0.27640
    FOURTH MOMENT =   0.77178
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) =   0.48268

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.0*RMS =   5.33938
    4.0*RMS*SQRT(1.0-BROAD**2/2.0*0.8) =   5.01876

TABLE 8

TEST 215 WAVLEE

NEAL MEAN =   5213.1035CTS
INTEGER MEAN =   5213 CTS
RMS VALUE   0.55185 PHYSICAL LNITS

START SUBROUTINE SPECTR FOR

TEST 215 WAVLEE

VELOCITY =   0.00000 FPS
LACS   =   60
SPECTRAL LNITS = (PHYSICAL LNITS)**2*SEC
SAMPLING RATE =   1.55559

OMEGA	S(OMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.000000	1.617106	0.000000	10.160579	0.350339
0.026720	0.545475	0.004253	5.565752	0.028128
0.053440	0.246865	0.008505	1.551123	0.017523
0.080155	0.214545	0.012758	1.382567	0.297179
0.106875	0.263060	0.017010	1.401525	0.045504
0.133595	0.236612	0.021263	1.466674	0.029440
0.160315	0.233669	0.025516	1.466184	0.047519
0.187035	0.226434	0.065768	1.416441	0.038539
0.213758	0.152088	0.034021	1.206922	0.035503
0.240478	0.134063	0.038273	0.842343	0.044671
0.267158	0.123444	0.042526	0.775619	0.033516
0.293918	0.127344	0.046778	2.800129	0.022212
0.320638	0.143177	0.051031	0.859606	0.047840
0.347357	0.171564	0.055284	1.080483	0.025951
0.374077	0.168123	0.059536	1.018648	0.019917
0.400797	0.148423	0.063789	0.932567	0.058943
0.427517	0.135920	0.068041	0.879145	0.035044
0.454237	0.124358	0.072294	0.781617	0.033038
0.480956	0.119770	0.076547	0.752534	0.058937
0.507676	0.125306	0.080799	0.686752	0.033532
0.534396	0.118406	0.085052	0.743567	0.038550
0.561116	0.145151	0.089304	0.912259	0.042848
0.587836	0.134076	0.093557	0.842422	0.036788
0.614555	0.127643	0.097809	0.802006	0.034870
0.641275	0.155350	0.102062	0.976344	0.034720
0.667995	0.172164	0.106315	1.028173A	0.032090
0.694715	0.152521	0.110567	0.958320	0.044448
0.721434	0.154393	0.114820	0.970888	0.028103
0.748154	0.210723	0.119072	1.334011	0.029223
0.774874	0.229784	0.123325	1.443777	0.051144
0.801594	0.227265	0.127578	1.322286	0.039736
0.828314	0.238515	0.131830	1.450880	0.022117
0.855034	0.285565	0.136083	1.754256	0.032997
0.881753	0.297932	0.140335	1.871560	0.044828
0.900473	0.245395	0.144588	1.567018	0.036928
0.935153	0.154857	0.148841	1.224323	0.033351
0.961513	0.230452	0.153093	1.447570	0.034864
0.988632	0.305758	0.157346	1.921136	0.032460
1.015352	0.314608	0.161598	1.976737	0.027752
1.042072	0.356397	0.165851	2.201611	0.046344
1.068751	0.416894	0.170103	2.619423	0.024863
1.095511	0.368125	0.174356	2.312556	0.020570
1.122231	0.268384	0.178609	1.686328	0.045374
1.148552	0.155544	0.182861	1.228640	0.023307
1.175671	0.145265	0.187114	0.512754	0.032558
1.202351	0.185584	0.191366	1.168573	0.045648
1.225111	0.242211	0.195619	1.521884	0.040402
1.255830	0.234533	0.199872	1.473611	0.039349
1.282550	0.228870	0.204124	1.438033	0.037298
1.305270	0.213573	0.208377	1.344433	0.025795
1.335550	0.170314	0.212625	1.070114	0.030684
1.362709	0.145308	0.216882	0.538131	0.030944
1.389429	0.143105	0.221135	0.855179	0.028674
1.416149	0.135285	0.225387	0.850022	0.027937
1.442869	0.150867	0.225640	0.947527	0.021789
1.469588	0.155822	0.233892	0.579088	0.026610
1.452308	0.131085	0.238145	0.823659	0.034213
1.513028	0.121451	0.242397	0.763899	0.027514
1.545747	0.130617	0.246650	0.820653	0.024747
1.576468	0.144751	0.255903	0.585458	0.027457
1.603188	0.154167	0.255155	0.568608	0.027365

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.603188)
    ZEROTH MOMENT =   0.35834
    SECOND MOMENT =   0.26687
    FOURTH MOMENT =   0.38318
    BROADNESS FACTOR (SQRT(1-M**2**2/(M0*M4))) =   0.68510

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4*SQRT(M0) =   0.36727
    .... =   0.07110

TABLE 9

TEST 618 E-C DISP

REAL PEAK = 3579.23 COUNTS
INTEGER PEAK = 3575 CTS
RMS VALUE = 8.76657 PHYSICAL UNITS

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START SUBROUTINE SPECTR FOR

TEST 618 E-C DISP

VELOCITY = 8.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55559

OMEGA	S(OMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.000000	2.153410	0.000000	13.530273	7.656122
0.026720	1.388460	0.004253	8.705181	-0.865815
0.053440	0.552534	0.008505	3.725516	-4.553073
0.080155	0.616518	0.012758	3.873658	2.348212
0.106875	0.702675	0.017010	4.415038	1.411363
0.133555	0.716865	0.021263	4.504217	-2.708990
0.160315	0.640352	0.025516	4.023327	-0.216967
0.187035	0.602735	0.025768	3.787054	1.681616
0.213758	0.556668	0.034021	3.457650	0.609235
0.240478	0.441335	0.039273	2.772589	0.271363
0.267155	0.456176	0.042526	2.866236	-0.184459
0.253518	0.538071	0.046778	3.380881	-0.827012
0.322638	0.658585	0.051031	4.391353	-0.215866
0.347357	1.424445	0.055284	8.958076	-2.857843
0.374077	4.415168	0.055536	27.766449	-0.209078
0.400757	5.016556	0.063789	56.655212	0.779220
0.427517	5.279408	0.068041	58.304245	0.770213
0.454237	4.867730	0.072254	30.584854	-0.278152
0.480956	1.712407	0.076547	10.759371	-0.107398
0.507676	0.815973	0.080799	5.152044	-0.072108
0.534356	0.538144	0.085052	3.381258	-0.661241
0.561116	0.688333	0.089304	3.822268	-0.103313
0.587836	0.857520	0.093557	5.390468	0.568472
0.614555	1.204823	0.097809	7.570128	0.318623
0.641275	1.888141	0.102062	11.360883	0.293975
0.667955	2.677468	0.106315	16.823029	0.185179
0.694715	5.066155	0.110567	31.806473	-0.422334
0.721434	7.443566	0.114820	46.765302	-0.151312
0.748154	8.517423	0.119072	53.516541	7.120731
0.774874	10.455015	0.123325	65.875288	-0.321352
0.801554	13.558734	0.127578	85.353057	0.087196
0.828314	16.630325	0.131830	104.451469	0.776778
0.855034	16.712280	0.136083	105.006348	0.186583
0.881753	16.031326	0.140335	100.727783	-0.348705

0.908473	16.842588	0.144588	105.811981	0.029276
0.935193	16.881238	0.148841	101.041357	-0.037552
0.961913	15.045231	0.153093	94.551567	-7.229551
0.988632	15.401415	0.157346	56.765543	0.149507
1.015352	16.660417	0.161598	106.062775	0.137972
1.042072	16.271484	0.165851	102.236742	0.156598
1.068875	10.580756	0.170103	68.994370	0.278892
1.095511	6.642501	0.174356	41.736065	-7.166314
1.122231	5.322275	0.178605	33.444857	-7.395575
1.148952	4.012583	0.182861	25.214318	0.074438
1.175671	3.165057	0.187114	15.511774	-0.253983
1.202351	2.762327	0.191366	17.356216	0.148361
1.229111	2.058016	0.195619	13.182221	0.569009
1.255830	1.681998	0.199872	10.568264	-0.173897
1.282550	1.512562	0.204124	5.503706	-0.246615
1.309270	1.184354	0.208377	7.441766	0.404791
1.335990	0.875523	0.212629	5.526203	0.149246
1.362705	0.817178	0.216882	5.134481	-0.416686
1.389425	0.788615	0.221135	4.955038	-0.098509
1.416145	0.711566	0.225387	4.473415	0.263388
1.442865	0.651655	0.229640	4.351704	0.279178
1.469580	0.704770	0.233892	4.428235	0.002026
1.496300	0.724572	0.238145	4.555135	-0.214690
1.523020	0.555552	0.242397	3.492007	-0.058116
1.549745	0.591992	0.246650	3.484705	-0.315796
1.576460	0.655658	0.250903	4.120258	-0.024577

THE SPECTRAL NUMBERS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.60315)

ZEROTH MOMENT = 7.65612
SECOND MOMENT = 0.37752
FOURTH MOMENT = 0.32468
BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) = 0.66032

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 11.04678

TABLE 10

TEST 21P WAVPILE

REAL PEAK = 10.75.65.31CTS
INTEGER PEAK = 1252 CTS
RMS VALUE = 1.79724 PHYSICAL UNITS

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START SLEROLTING SPECTR FCR

TEST 21P WAVPILE

VELOCITY = 0.00000 FPS
LAGS = 64
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.95559

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.053440	0.038962	0.008505	2.758078	-0.771478
0.080155	0.447099	0.012758	2.557881	1.132650
0.106875	0.053260	0.017010	2.847518	0.066062
0.133595	0.422821	0.021263	2.656666	-0.266939
0.160315	0.13495	0.025516	2.558068	0.108857
0.187035	0.386515	0.029768	2.428544	0.111897
0.213755	0.355283	0.034021	2.257442	0.108296
0.240478	0.396821	0.038273	2.453302	0.176046
0.267158	0.446345	0.042526	2.746756	0.015425
0.293518	0.462754	0.046778	2.907822	-0.100522
0.320638	0.471908	0.051031	2.565084	0.282138
0.347357	0.457514	0.055284	2.874642	0.218820
0.374077	0.358625	0.059536	2.584661	-0.263323
0.400797	0.376552	0.063789	2.328458	0.170785
0.427517	0.344524	0.068041	2.167223	0.269677
0.454237	0.324534	0.072294	2.035109	-0.158323
0.480956	0.388751	0.076547	2.442595	0.142588
0.507676	0.402562	0.080799	2.525371	0.165938
0.534356	0.347088	0.085052	2.180821	-0.041435
0.561116	0.361215	0.089304	2.265584	0.144144
0.587836	0.415718	0.093557	2.637166	0.156786
0.614555	0.506445	0.097809	3.182114	-0.058000
0.641275	0.553835	0.102062	3.725293	0.167457
0.667955	0.716633	0.106315	4.456454	0.145762
0.694715	1.151118	0.110567	7.484016	-0.043545
0.721434	1.732414	0.114820	10.885279	0.128527
0.748154	2.348550	0.119072	14.756625	0.117621
0.774874	3.286175	0.123325	20.689555	0.047490
0.801594	3.866484	0.127578	24.293839	0.023728
0.828314	3.528262	0.131830	24.061552	0.116621
0.855034	3.554462	0.136083	22.514671	0.116659
0.881753	3.531068	0.140335	22.126356	0.030989

0.908473	3.686328	0.144588	23.161835	0.085783
0.935193	3.565665	0.148841	22.051855	0.046768
0.961513	3.881585	0.153093	24.351235	0.118634
0.988632	4.671557	0.157346	30.608907	0.061385
1.015352	6.114531	0.161598	38.421249	0.076182
1.042072	6.768818	0.165851	42.525739	0.049107
1.068751	5.654155	0.170103	35.526108	0.122841
1.095511	4.055848	0.174356	25.733078	0.063741
1.122231	3.253736	0.178609	20.655160	-0.003755
1.148952	3.128626	0.182861	19.607468	0.163154
1.175671	3.716588	0.187114	23.351456	-0.039377
1.202351	3.588186	0.191366	25.058802	0.047368
1.229111	3.625037	0.195619	22.776779	0.244700
1.255830	3.323201	0.199872	20.880255	-0.069501
1.282550	2.877651	0.204124	18.000811	-0.014298
1.309270	2.627384	0.208377	16.508347	0.170031
1.335990	2.376257	0.212629	14.530462	0.250958
1.362709	1.871658	0.216882	11.760173	0.041644
1.389429	1.757548	0.221135	11.254751	-0.005446
1.416149	2.007713	0.225387	12.614854	0.119776
1.442869	1.524160	0.229640	12.065652	0.134446
1.469588	1.675128	0.233892	10.525135	0.011988
1.496308	1.578525	0.238145	5.870411	0.065074
1.523028	1.454705	0.242397	5.366276	0.087011
1.549747	1.421823	0.246650	8.533574	0.092851
1.576467	1.551555	0.250903	5.353657	0.064304
1.603186	1.591137	0.255155	5.347539	0.093726

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.60315)
    ZEROTH MOMENT = 3.23000
    FIRST MOMENT = 3.85834
    FOURTH MOMENT = 8.16054
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4)) = 0.47262

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.0*RMS = 7.18898
        4.0*RMS*SQRT(1.0-BROAD**2/2.0) = 6.77567

TABLE 11

TEST 218 WAVLEF

REAL PEAK =   4866.16757CTS
INTEGER PEAK =   4866 CTS
RMS VALUE   0.76687 PHYSICAL UNITS

START SMOOTHING SPECTH FOR

TEST 218 WAVLEF

VELOCITY =   0.00000 FPS
LAGS   =   60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.00000	1.660610	0.00000	10.056928	0.588092
0.02672	0.535182	0.004253	5.645714	-0.005884
0.053440	0.153383	0.008505	1.215062	-0.151612
0.082155	0.274720	0.012758	1.726115	0.129673
0.106879	0.361023	0.017010	2.268376	0.166461
0.133555	0.272645	0.021263	1.713101	-0.016219
0.160315	0.145735	0.025516	0.548815	-0.032973
0.187035	0.125680	0.029768	0.785671	0.067324
0.213758	0.144100	0.034021	0.905484	0.101640
0.240478	0.181620	0.038273	1.015450	0.014312
0.267198	0.187146	0.042526	1.175870	0.000737
0.293918	0.205301	0.046778	1.285548	0.057766
0.320638	0.202287	0.051031	1.271089	0.051737
0.347357	0.150876	0.055284	1.155306	0.029130
0.374077	0.168528	0.055536	1.061406	0.021173
0.400797	0.153406	0.063789	0.963875	0.043190
0.427517	0.155140	0.068041	0.974772	0.009332
0.454237	0.167742	0.072294	1.053553	0.017506
0.480956	0.184015	0.076547	1.156207	0.044340
0.507676	0.171399	0.080799	1.076534	0.021103
0.534356	0.150956	0.085052	0.948735	0.035269
0.561116	0.168826	0.089304	1.060762	0.042420
0.587836	0.196915	0.093557	1.237250	0.027579
0.614555	0.216487	0.097809	1.360227	0.056121
0.641275	0.233893	0.102062	1.469556	0.034576
0.667995	0.306564	0.106315	1.928711	0.228631
0.694715	0.475165	0.110567	2.985577	0.059520
0.721434	0.567275	0.114820	3.564257	0.050456
0.748154	0.659514	0.119072	4.143750	0.041645
0.774874	0.836587	0.123325	5.256420	0.054364
0.801594	0.517613	0.127578	5.765534	0.033507
0.828314	1.030856	0.131532	6.475172	0.052074
0.855034	1.184597	0.136083	6.540388	0.045027
0.881753	0.584886	0.140335	6.188222	0.049703

0.908473	0.668562	0.144588	5.457337	0.041116
0.935193	0.741856	0.148841	4.661216	0.037176
0.961913	0.557152	0.153093	3.752018	0.025903
0.988632	0.506085	0.157346	3.179849	0.056154
1.015352	0.424754	0.161558	2.665061	0.031422
1.042072	0.426781	0.165851	2.681546	0.026467
1.068791	0.473127	0.170103	2.972743	0.021876
1.095511	0.504930	0.174356	3.172569	0.045324
1.122231	0.464847	0.178609	2.520722	0.041660
1.148952	0.317248	0.182861	1.993325	0.012399
1.175671	0.235358	0.187114	1.503925	0.014598
1.202351	0.284500	0.191366	1.787566	0.054490
1.229111	0.334204	0.195619	2.055863	0.054376
1.255830	0.300834	0.199872	1.885172	0.023261
1.282550	0.235258	0.204124	1.478168	0.018876
1.309270	0.202474	0.208377	1.272181	0.055217
1.335990	0.185653	0.212629	1.166451	0.031388
1.362709	0.187828	0.216882	1.180157	0.022373
1.389429	0.191772	0.221135	1.204542	0.035622
1.416149	0.180442	0.225387	1.133754	0.029421
1.442869	0.155130	0.229640	1.286038	0.041540
1.469588	0.207194	0.233892	1.301838	0.048462
1.496308	0.191100	0.238145	1.137883	0.015115
1.523028	0.156685	0.242397	1.735331	0.032595
1.549747	0.242775	0.246650	1.525397	0.054514
1.576466	0.532652	0.250902	1.345657	0.055529

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT SI   1.423151
    ZEROTH MOMENT =   0.99985
    SECOND MOMENT =   0.46557
    FOURTH MOMENT =   0.55705
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) =   0.61775

SIGNIFICANT WAVE HEIGHT, H(1/3)
        4*SQRT =   3.98749
        .... PHYSICAL UNITS =   2.75936

TABLE 12

TEST 31° B-C CISFL

NEAL MEAN =   1ESS.ES111CTS
INTEGER PEAK =   13@@ CTS
RMB VALUE   @.78827 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST 31° B-C FISPL

    VELOCITY =   @.@@@@@ FPS
    LAGS   = 6@
    SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
    SAMPLING RATE =   1.55559

CMEGA	S(CMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
@.@@@@@	1.511285	@.@@@@@	5.495889	@.621@50
@.@2672@	@.535546	@.@@4253	5.5@6852	-@.@38348
@.@5344@	@.313825	@.@@8505	1.971848	-@.@58145
@.@8@159	@.235184	@.@12758	1.477762	@.117394
@.1@687S	@.21@526	@.@17@1@	1.322777	@.@35556
@.133555	@.1551S6	@.@21263	1.226263	-@.@4@665
@.16@319	@.157946	@.@25516	@.992423	@.@56543
@.187@35	@.18614S	@.@25768	@.561184	@.@43756
@.21375E	@.19222S	@.@34@21	1.2@7785	@.11@741
@.24@478	@.155502	@.@38273	1.256@22	2.@53798
@.26715@	@.21@766	@.@42526	1.324@@@	@.@13343
@.25351@	@.22768@	@.@46778	1.43@1@3	@.@29944
@.32@63@	@.216951	@.@51@31	1.363@55	@.@45437
@.347357	@.234744	@.@55284	1.474542	-2.@@6717
@.374@77	@.45284@	@.@55536	2.845328	@.@@5597
@.4@@757	@.66667@	@.@6378S	4.514473	@.1@2719
@.427517	@.511168	@.@66@41	3.211761	@.@61611
@.454237	@.22525S	@.@72294	1.44@449	@.@@2138
@.48@56E	@.18485@	@.@76547	1.161659	@.@68322
@.5@7676	@.2@@285	@.@8@7SS	1.258425	@.@28137
@.53439E	@.17521@	@.@85@52	1.1@@@@@	-@.@28736
@.56111@	@.15632@	@.@85304	@.582142	@.@56923
@.58783@	@.15602@	@.@53557	1.231675	@.@38774
@.614555	@.247539	@.@57809	1.555332	@.@@3548
@.641275	@.25226S	@.1@2@62	1.585@55	@.@88560
@.66759S	@.21841@	@.1@6315	1.372357	@.@55799
@.694715	@.215873	@.11@567	1.356367	@.@15567
@.721434	@.279366	@.114822	1.755385	@.@13448
@.74815@	@.373278	@.115@72	2.345378	@.@2@553
@.77487@	@.56685E	@.123325	3.157259	-@.@@6677
@.8@1554	@.61@315	@.12757E	3.834723	@.@5@227
@.82831@	@.62356E	@.13183@	3.517582	@.@57947
@.85503@	@.65886@	@.13608S	4.351155	@.@33731
@.88175S	@.75422E	@.14@335	4.738555	@.@55503

@.5@8473	@.647464	@.14458E	4.@68138	@.@31442
@.93515S	@.48281S	@.148841	3.@28579	-@.@29890
@.961913	@.362435	@.15305S	2.277249	@.@35496
@.58863@	@.34850S	@.157346	2.189748	@.@29351
1.@1535@	@.537611	@.16159E	3.377512	-@.@25874
1.@42@72	@.53626@	@.16585E	5.@8272@	@.@62328
1.@6875@	@.56537@	@.17@1@3	6.@5@745	@.@4943@
1.@95511	@.5876SS	@.174356	3.652372	@.@19176
1.12223@	@.44547@	@.17860S	2.8241@3	@.@26234
1.14895@	@.46781S	@.18286@	3.@6@@@@	@.@26935
1.17567@	@.47@765	@.187114	2.957501	-@.@@2477
1.2@235@	@.51202@	@.191366	3.217168	@.@49921
1.22511@	@.52792@	@.155619	3.317@2@	@.@23575
1.25583@	@.42268@	@.15587E	2.643264	@.@27987
1.28255@	@.25838E	@.2@4124	1.874826	@.@60978
1.3@527@	@.25458S	@.2@8377	1.595126	@.@3976@
1.33555@	@.25386E	@.21266S	1.595487	-@.@25267
1.36270S	@.22555S	@.21688E	1.417215	@.@27@21
1.38542S	@.21642S	@.22113S	1.355686	@.@2@3@3
1.41614S	@.22883@	@.225387	1.43275E	@.@1384E
1.44286S	@.24482E	@.22564@	1.53825E	@.@22114
1.46556E	@.3@881S	@.23385E	1.535342	@.@72443
1.4963@E	@.35113S	@.23814S	2.2@666E	@.@@9195
1.5238ØE	@.311207	@.24259S	1.555368	@.@2365E
1.54674S	@.337843	@.24665@	2.11778E	@.@5563S
1.57646E	@.42667S	@.25@5@3	2.68@5@E	@.@22@57
1.6@318E	@.45221S	@.25515S	2.84@@76	@.@24119

THE SPECTRAL MOMENTS WERE CCMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT bI   1.6@315)
        ZEROTH MOMENT =   @.62185
        SECOND MOMENT =   @.54537
        FOURTH MOMENT =   @.8@@35
        BROADNESS FACTOR (SQRT(1.@-ME**2/(M@*M4))) =   @.62678

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.@*RMS =   3.15227
        4.@*RMS*SQRT(1.@-BROAD**2/2.@) =   2.82577

TABLE 13

TEST 319 RAWHIDE

REAL PEAK = 6931.37851CTS
INTEGER PEAK = 6931 CTS
RMS VALUE = 1.48231 PHYSICAL UNITS

-30-

START SUBROUTINE SPECTR FOR

TEST 319 RAWHIDE

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	1.184666	0.000000	7.443474	1.966475
0.026726	0.807237	0.004253	5.072219	-0.658755
0.053448	0.461211	0.008505	2.897874	0.126916
0.080155	0.514456	0.012758	3.232672	0.282987
0.106875	0.503176	0.017010	3.664283	-0.197471
0.133555	0.763653	0.021263	4.798172	0.010558
0.160319	0.505331	0.025516	5.566651	-0.116166
0.187035	0.935298	0.029768	5.224029	-0.055239
0.213756	0.772725	0.034021	4.855173	-0.152880
0.240478	0.703244	0.038273	4.418614	0.110945
0.267158	0.662547	0.042526	3.785512	-0.038369
0.293518	0.734552	0.046778	4.617837	0.014492
0.320638	0.751155	0.051031	4.715668	0.050114
0.347357	0.532052	0.055284	3.330417	-0.014376
0.374077	0.420923	0.059536	2.644738	-0.018347
0.400757	0.452420	0.063789	2.842635	0.078491
0.427517	0.471553	0.068041	2.962855	-0.033461
0.454237	0.506721	0.072294	3.183221	0.069876
0.480966	0.536887	0.076547	3.373363	-0.006985
0.507676	0.562468	0.080799	3.534650	-0.007361
0.534396	0.649017	0.085052	3.826669	0.118443
0.561116	0.556126	0.089304	3.745571	0.039544
0.587836	0.624545	0.093557	4.301148	-0.004669
0.614555	0.894585	0.097809	5.555708	0.053349
0.641275	0.872648	0.102062	5.483007	-0.028857
0.667995	0.661060	0.106315	4.153561	0.042219
0.694715	0.488835	0.110567	3.071439	0.021938
0.721434	0.477148	0.114820	2.998010	-0.002809
0.748154	0.614372	0.119072	3.866211	-0.033429
0.774874	0.642705	0.123325	4.038233	0.092045
0.801594	0.652532	0.127578	4.099978	-0.023132
0.828314	0.713250	0.131830	4.481482	0.052130
0.855034	0.671385	0.136083	4.218439	0.079119
0.881753	0.781761	0.140335	4.911547	-0.098465

0.900473	1.087921	0.144588	6.835609	0.070783
0.935153	1.305295	0.148841	8.226664	-0.007529
0.961513	1.507834	0.153093	9.474023	0.008978
0.988632	1.868325	0.157346	11.676200	-0.024353
1.015352	2.143072	0.161558	13.465315	0.058669
1.042072	2.146285	0.165851	13.475250	0.023590
1.068751	2.326544	0.170103	14.618105	0.044691
1.095511	2.866821	0.174356	17.635773	0.260385
1.122231	2.861104	0.178609	17.976652	0.054533
1.148952	2.375785	0.182861	14.295181	0.069074
1.175671	1.755845	0.187114	11.283627	-0.015231
1.202351	1.841285	0.191366	11.569157	0.018196
1.229111	1.923223	0.195619	12.087738	0.019571
1.255830	1.566347	0.199872	12.354520	0.027774
1.282550	2.097591	0.204124	13.179555	0.012462
1.309270	2.248316	0.208377	14.076323	-0.032831
1.335990	2.161814	0.212629	13.583076	0.019874
1.362709	1.849778	0.216882	11.622444	0.032926
1.389429	1.936232	0.221135	12.128005	-0.030876
1.416149	2.246827	0.225387	14.074361	0.068595
1.442865	2.166453	0.229640	13.247799	-0.008726
1.469586	1.835857	0.233892	11.566163	0.053284
1.496306	1.538274	0.238145	12.178536	0.058172
1.523026	1.538670	0.242397	12.168172	-0.212778
1.549747	1.556565	0.246650	10.031515	0.256566
1.576468	1.351770	0.250903	8.493423	0.019885
1.603188	1.256687	0.255155	8.141840	-0.074276

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.603157)
    ZEROTH MOMENT = 1.56648
    SECOND MOMENT = 8.35761
    FOURTH MOMENT = 3.58151
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) = 0.82498

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4.0*M0 = 6.26522
    4.0*M0*SQRT(1.0-BROAD/2**2/2.0) = 5.22845

TABLE 14

TEST 315 WAYLEE

NEAL PEAK = 2579.24635CTS
INTEGER PEAK = 2575 CTS
RMS VALUE = 0.76847 PHYSICAL UNITS

START SMOOTHTIME SPECTR FOR

TEST 315 WAYLEE

VELOCITY = 0.00000 FPS
LAGS = 69
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.58559

OMEGA	S(OMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.000000	1.073451	0.000000	8.001328	0.578308
0.026720	0.753656	0.004253	4.736615	-0.041261
0.053440	0.235615	0.008525	1.585569	-0.016234
0.080155	0.258385	0.012758	1.623025	0.129150
0.106875	0.272248	0.017010	1.710535	0.203923
0.133595	0.252573	0.021263	1.638250	-0.022870
0.160315	0.310352	0.025516	1.558253	0.000026
0.187035	0.255365	0.025768	1.800563	0.229880
0.213758	0.326273	0.034021	2.050031	-0.038664
0.240478	0.532635	0.038273	2.077463	0.243196
0.267198	0.292632	0.042526	1.826656	0.234759
0.293918	0.366651	0.046778	1.526554	0.236133
0.320638	0.251283	0.051031	1.825882	0.226800
0.347357	0.226201	0.055284	1.383562	0.006568
0.374077	0.155063	0.055536	1.290749	0.055805
0.400757	0.223090	0.063765	1.401717	0.010724
0.427517	0.211370	0.068041	1.328077	0.235350
0.454237	0.186442	0.072254	1.133752	0.024669
0.480956	0.151004	0.076547	1.220111	0.232710
0.507676	0.226612	0.080755	1.423842	0.018655
0.534356	0.237415	0.085052	1.491721	0.016065
0.561116	0.224613	0.085304	1.411284	0.255267
0.587836	0.273560	0.093557	1.721340	0.042821
0.614555	0.352492	0.097829	2.222287	-0.023408
0.641275	0.326215	0.102062	2.045653	0.257325
0.667595	0.251777	0.106315	1.581564	0.252859
0.694715	0.210568	0.110567	1.323035	-0.007755
0.721434	0.157924	0.114820	1.243552	0.232752
0.748154	0.226060	0.119072	1.420380	0.246078
0.774874	0.261758	0.123385	1.614477	-0.006219
0.801594	0.242650	0.127578	1.524616	0.044889
0.828314	0.225100	0.131830	1.288682	0.267513
0.855034	0.274315	0.136083	1.723557	-0.015208
0.881753	0.462827	0.140335	2.588226	0.255901

0.508473	0.631570	0.144588	3.978783	0.027243
0.535153	0.666638	0.148841	4.313016	-0.026070
0.561913	0.637295	0.153053	4.004243	0.263811
0.588632	0.568365	0.157346	3.194150	0.027213
1.615352	0.565668	0.161558	3.579329	0.021986
1.642072	0.802853	0.165851	5.421719	0.042710
1.668751	0.803565	0.170103	5.048546	0.036091
1.695511	0.452297	0.174356	2.840807	0.025364
1.722231	0.468451	0.178605	2.853857	0.045236
1.748952	0.666207	0.182861	4.184647	0.041017
1.775671	0.565347	0.187114	3.552179	0.211841
1.802351	0.368156	0.191366	2.262525	0.028667
1.829111	0.328771	0.195619	1.542063	0.235624
1.855838	0.267468	0.195872	1.806342	0.010730
1.882588	0.237023	0.204124	1.489257	0.031787
1.905278	0.301115	0.208377	1.851564	0.010374
1.935558	0.445555	0.212625	2.755528	0.026959
1.362785	0.448585	0.216882	2.778818	0.013324
1.385429	0.395458	0.221135	2.510121	0.031079
1.416145	0.448960	0.225387	2.538153	0.043489
1.442865	0.379472	0.229640	2.384253	0.205228
1.465588	0.367367	0.233852	1.932864	0.059054
1.456305	0.221134	0.238145	1.385428	0.026981
1.523068	0.167875	0.242357	1.306116	0.223312
1.545747	0.244468	0.246650	1.536039	0.220533
1.576468	0.290599	0.250903	1.662850	0.011222
1.603188	0.310418	0.255155	1.581811	0.019329

THE SPECTRAL POINTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT F1 = 1.483151
ZEROTH MOMENT = 0.57831
SECOND MOMENT = 0.52073
FOURTH MOMENT = 0.76866
BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) = 0.62450

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 3.06180
4.0*RMS*SQRT(1-BROAD**2/2.0) = 2.72922

TABLE 15

TEST 318 B-C CTSFL

REAL PEAK = 2189.57184CTS
INTEGER PEAK = 2190 CTS
RMS VALUE = 1.17332 PHYSICAL UNITS

START SMOOTHING SPECTR FOR

TEST 318 B-C CTSFL
C

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.00000	0.685224	0.000000	4.302523	1.376687
0.026728	0.543246	0.004253	3.413314	0.017640
0.053448	2.395354	0.008508	2.484888	-0.623266
0.080178	0.366625	0.012761	2.420666	0.663032
0.106898	0.352221	0.017016	2.429555	0.582491
0.133558	0.431052	0.021263	2.708383	-0.050985
0.160315	0.410771	0.025516	2.580552	-0.141591
0.187035	0.318251	0.029768	1.999883	0.017900
0.213758	0.271514	0.034021	1.705571	0.141271
0.240478	0.287173	0.038273	1.804358	0.115725
0.267158	0.255446	0.042526	1.681472	0.013082
0.293918	2.884215	0.046778	1.785778	-0.064808
0.320638	0.354455	0.051031	2.227358	-0.138620
0.347357	0.528552	0.055284	3.505485	-0.075970
0.374077	1.017362	0.059536	6.352271	0.161610
0.400797	1.395157	0.063789	8.751411	0.074174
0.427517	1.084826	0.068041	6.816165	-0.161679
0.454237	0.545865	0.072294	3.425752	0.060757
0.480956	0.326593	0.076547	2.052042	0.230859
0.507676	0.365350	0.080799	2.320697	-0.041132
0.534396	0.605564	0.085052	3.804668	-0.216967
0.561116	0.701626	0.089304	4.408448	-0.017277
0.587836	0.651819	0.093557	4.095453	0.101744
0.614555	0.686454	0.097809	4.313367	0.045673
0.641275	0.798850	0.102062	5.019321	0.072240
0.667995	1.755055	0.106315	11.027550	2.032949
0.694715	3.047938	0.110567	15.150757	-0.078527
0.721434	2.768888	0.114820	17.357446	-0.027558
0.748154	1.875316	0.119072	11.808092	0.100640
0.77487	1.737267	0.123325	10.51557	-0.001705
0.801554	1.741571	0.127578	10.542616	-0.138134
0.828314	1.575754	0.131830	5.526138	0.011402
0.855034	1.502656	0.136083	11.554588	0.173650
0.881753	2.874305	0.140335	18.055814	0.028916

0.908473	2.544468	0.144588	18.500641	-0.123570
0.935193	1.795406	0.148841	11.280870	-0.056597
0.961913	0.555267	0.153093	6.085444	0.122962
0.988632	0.880797	0.157346	5.534813	0.043480
1.015352	0.988553	0.161558	6.214823	-0.071342
1.042072	1.281412	0.165851	8.055358	-0.065193
1.068791	1.277811	0.170103	8.028723	0.063098
1.095511	1.051253	0.174356	6.856546	0.034223
1.122231	0.996720	0.178609	6.262879	0.042902
1.148952	0.746145	0.182861	4.688165	0.005006
1.175671	0.565323	0.187114	3.577164	-0.121939
1.202391	0.605504	0.191366	3.803151	-0.008379
1.229111	0.450251	0.195619	2.825010	0.134622
1.255830	0.416740	0.199872	2.618452	0.028015
1.282550	0.412660	0.204124	2.552816	-0.035927
1.309270	0.435316	0.208377	2.735168	0.005120
1.335990	0.415022	0.212629	2.632750	0.018469
1.362709	0.340547	0.216882	2.142234	0.030443
1.389429	0.285845	0.221135	1.849024	-0.009944
1.416149	0.277864	0.225387	1.745869	-0.098158
1.442869	0.248211	0.229640	1.555555	0.027544
1.469588	0.286822	0.233892	1.602458	0.092424
1.496308	0.282038	0.238145	1.778058	-0.037705
1.523028	0.262038	0.242397	1.646431	-0.054502
1.549747	0.234554	0.246660	1.473747	0.000300
1.576468	0.236615	0.250903	1.486067	0.072086
1.603188	0.248488	0.255155	1.561879	-0.048127

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.60315)
    ZEROTH MOMENT = 1.37665
    SECOND MOMENT = 1.00665
    FOURTH MOMENT = 1.11345
    BROADNESS FACTOR (SQRT(1.0-F2**2/(F0*F4))) =   0.58238

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.*SQRT5 =   4.45365
        4.*SQRT5*SQRT(1.0-SQRT(C**2/2*F0) =   4.27687

TABLE 16

```
TEST 318 WAVWINC
    REAL  PEAK  =        7564.7617.CTS
    INTEGER PEAK =       7580 CTS
    RMS VALUE            1.85842 PHYSICAL UNITS
```

START SMOOTHING SPECTRA FOR

18 WAVWINC

```
    VELOCITY  =   0.00000 FPS
    LAGS      =   60
    SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
    SAMPLING RATE =   1.50000
```

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCORR
0.000000	0.410635	0.000000	15.146469	3.431478
0.026728	1.558732	0.004253	10.045129	-0.992262
0.053448	0.741255	0.008505	4.667441	-0.852232
0.080005	0.855851	0.012758	4.222658	0.924735
0.133555	0.621414	0.021263	3.584462	-0.367677
0.160315	0.754927	0.025516	4.743223	-0.099900
0.187035	0.538765	0.029768	5.058469	0.337108
0.213758	0.522030	0.034021	5.667624	0.038122
0.240478	0.668474	0.038273	4.200147	-2.097701
0.267158	0.526612	0.042526	3.308258	0.073613
0.293518	0.574738	0.046778	3.611185	0.101834
0.320658	0.703454	0.051031	4.415534	0.025106
0.347357	0.775418	0.055284	4.872053	0.016737
0.374077	0.686095	0.059536	4.318859	0.011007
0.400757	0.553531	0.063789	3.477940	0.169060
0.427517	0.586424	0.068041	3.181556	0.075473
0.454237	0.540727	0.072294	3.354347	-0.049378
0.480956	0.575068	0.076547	3.613817	0.092653
0.507676	0.537937	0.080799	3.379556	0.206962
0.534356	0.505256	0.085052	3.200003	-0.017758
0.561116	0.537285	0.089304	3.375887	-0.022798
0.587836	0.584564	0.093557	3.674809	0.020556
0.614565	0.650300	0.097809	4.085555	0.144511
0.641275	0.861207	0.102062	5.034134	-0.089114
0.667955	1.126582	0.106315	7.078554	-0.019327
0.694715	1.655415	0.110567	10.426437	0.155837
0.721434	1.824355	0.114820	11.462785	-0.086787
0.748154	1.644563	0.119072	10.335734	0.095396
0.774874	2.256803	0.123385	14.152479	0.231165
0.801594	3.652854	0.127578	23.203148	-0.214396
0.828314	4.582137	0.131830	28.756421	0.254630
0.855034	4.732884	0.136083	25.735825	0.306056
0.881753	5.487895	0.140335	34.481451	-0.058521

0.908473	5.718337	0.144588	35.875105	-0.124817
0.935193	4.434525	0.148841	27.862561	0.174141
0.961913	4.454556	0.153093	27.985844	0.222634
0.988632	5.537488	0.157346	37.306258	-0.218098
1.015352	5.637771	0.161598	35.423157	0.068268
1.042072	4.058703	0.165851	25.752514	0.191159
1.068751	3.532313	0.170103	24.707443	-0.071551
1.095511	4.257525	0.174356	27.004654	0.021264
1.122231	3.875548	0.178609	24.375516	0.096867
1.148952	3.337478	0.182861	20.565555	0.018106
1.175671	3.650340	0.187114	15.417175	-0.003860
1.202351	3.347615	0.191366	21.033707	0.045171
1.229111	3.726174	0.195619	23.452247	0.046817
1.255830	3.326558	0.199872	20.866448	0.041424
1.282550	2.628463	0.204124	16.515121	0.008749
1.309270	2.543077	0.208377	15.597821	0.021407
1.335550	2.768602	0.212629	17.395645	0.116802
1.362705	2.458578	0.216882	15.457734	-0.028479
1.389425	2.566358	0.221135	13.611844	0.003425
1.416145	2.677285	0.225387	13.001565	0.072951
1.442865	1.756135	0.229640	11.285477	0.052232
1.469588	1.662776	0.233892	5.544875	0.057738
1.496308	1.648884	0.238145	10.360248	-0.097951
1.523028	1.634542	0.242397	10.274133	0.090635
1.549747	1.372403	0.246650	8.673663	0.062466
1.576468	1.167556	0.250903	7.087158	-0.113058
1.603186	1.045199	0.255155	6.567188	0.113768

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT SI   1.603186)
    ZEROTH MOMENT =   3.42148
    SECOND MOMENT =   3.64276
    FOURTH MOMENT =   2.33242
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) =   0.49653

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        H*RMS =   7.40576
        H*RMS*SQRT(1+BROAD**2/2*PI) =   8.53758
```

TABLE 17

TEST 318 WAYLEE

REAL PEAK = 4767.19629CTS
INTEGER PEAK = 4767 CTS
RMS VALUE = 1.86127 PHYSICAL UNITS

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SMOOTHED SPECTRUM FOR

TEST 318 WAYLEE

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.99999

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCORR |
|---|---|---|---|---|
| 0.000000 | 2.044100 | 0.000000 | 12.843457 | 1.126895 |
| 0.026720 | 1.246744 | 0.004253 | 7.755822 | -0.076199 |
| 0.053440 | 0.383581 | 0.008500 | 2.412622 | -0.414943 |
| 0.080000 | 0.496629 | 0.012750 | 3.708182 | 0.281029 |
| 0.133000 | 0.385853 | 0.021263 | 2.047357 | -0.201387 |
| 0.160215 | 0.342878 | 0.025516 | 2.154367 | -0.026882 |
| 0.187035 | 0.454644 | 0.025765 | 2.856612 | 0.232054 |
| 0.213758 | 0.386864 | 0.034021 | 2.430740 | 0.004524 |
| 0.240478 | 0.272455 | 0.038273 | 1.655342 | -0.061943 |
| 0.267198 | 0.250603 | 0.042556 | 1.574587 | 0.118452 |
| 0.293918 | 0.255038 | 0.046778 | 1.627544 | 0.150787 |
| 0.320638 | 0.332603 | 0.051031 | 2.085804 | -0.093367 |
| 0.347357 | 0.356431 | 0.055284 | 2.450848 | -0.044372 |
| 0.374077 | 0.337050 | 0.059536 | 2.117745 | 0.211091 |
| 0.400797 | 0.264807 | 0.063789 | 1.663829 | 0.240364 |
| 0.427517 | 0.237376 | 0.068041 | 1.451477 | -0.069588 |
| 0.454237 | 0.215854 | 0.072294 | 1.356504 | 0.073689 |
| 0.480956 | 0.213446 | 0.076547 | 1.341123 | 0.131459 |
| 0.507676 | 0.217456 | 0.080755 | 1.366313 | 0.047867 |
| 0.534396 | 0.201989 | 0.085052 | 1.268634 | -0.028458 |
| 0.561116 | 0.206037 | 0.089304 | 1.294568 | 0.068458 |
| 0.587836 | 0.262524 | 0.093557 | 1.775149 | 0.095762 |
| 0.614555 | 0.376456 | 0.097809 | 2.365341 | -0.045626 |
| 0.641275 | 0.454284 | 0.102062 | 3.105678 | 0.016338 |
| 0.667995 | 0.724825 | 0.106315 | 4.555212 | 0.121356 |
| 0.694715 | 0.580866 | 0.110567 | 5.574463 | 0.006365 |
| 0.721434 | 0.866508 | 0.114820 | 5.406734 | -0.037228 |
| 0.748154 | 0.661887 | 0.119072 | 4.158760 | 0.144087 |
| 0.774874 | 0.840345 | 0.123325 | 5.280044 | 0.084947 |
| 0.801554 | 1.077154 | 0.127578 | 6.767555 | -0.045207 |
| 0.828314 | 1.156511 | 0.131830 | 7.266575 | 0.060121 |
| 0.855034 | 1.864355 | 0.136083 | 11.714363 | 0.106030 |
| 0.881753 | 3.132414 | 0.140335 | 15.681534 | 0.085134 |

| 0.508475 | 3.357250 | 0.144588 | 21.054223 | -0.022995 |
| 0.505153 | 2.546140 | 0.148841 | 15.957667 | 0.043647 |
| 0.561513 | 1.863518 | 0.153093 | 11.708827 | 0.120186 |
| 0.588632 | 1.536155 | 0.157346 | 5.614248 | 0.254508 |
| 1.018382 | 1.483648 | 0.161598 | 5.322037 | 0.007117 |
| 1.042072 | 1.247458 | 0.165851 | 7.830013 | 0.024262 |
| 1.068751 | 0.888925 | 0.170103 | 5.585288 | 0.078963 |
| 1.095511 | 0.842845 | 0.174356 | 5.295779 | 0.017513 |
| 1.122231 | 6.567167 | 0.178605 | 6.076850 | -0.023012 |
| 1.148952 | 1.625635 | 0.182861 | 6.444253 | 0.048292 |
| 1.175671 | 6.808615 | 0.187114 | 5.020675 | 0.054052 |
| 1.202351 | 6.457842 | 0.191366 | 3.128035 | -0.006963 |
| 1.229111 | 0.368733 | 0.195619 | 2.316817 | 0.029755 |
| 1.255830 | 0.354552 | 0.199872 | 2.227569 | 0.079688 |
| 1.288550 | 0.364562 | 0.204124 | 1.516130 | 0.011855 |
| 1.309370 | 0.310833 | 0.208377 | 1.553021 | 0.003760 |
| 1.335550 | 0.468232 | 0.212629 | 2.541586 | 0.095506 |
| 1.362765 | 0.564835 | 0.216888 | 3.171555 | 0.015791 |
| 1.385425 | 0.367344 | 0.221135 | 2.308052 | -0.014533 |
| 1.416145 | 0.255385 | 0.225387 | 1.881115 | 0.073028 |
| 1.442865 | 0.313760 | 0.225640 | 1.571411 | 0.055818 |
| 1.469588 | 0.265611 | 0.233892 | 1.668865 | 0.004616 |
| 1.496308 | 0.171496 | 0.238145 | 1.077478 | 0.012739 |
| 1.523028 | 0.145341 | 0.242397 | 0.558338 | 0.062914 |
| 1.549747 | 0.163751 | 0.246650 | 1.028876 | 0.050876 |
| 1.576468 | 0.154786 | 0.250903 | 0.572551 | -0.001685 |
| 1.603188 | 0.147138 | 0.255155 | 0.564458 | -0.004800 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S( 1.00315)
ZEROTH MOMENT = 1.18630
SECOND MOMENT = 0.51193
FOURTH MOMENT = 1.00356
BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) = 0.88896

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 4.04500
4.0*RMS*SQRT(1.0-BROAD/0.0+2.0) = 3.58714

TABLE 18

TEST 415 B-C DISPL

REAL MEAN = 3161.532±2CTE
INTEGER MEAN = 3162 CTE
RMS VALUE = 1.53566 PHYSICAL UNITS

c TEST 415 B-D DISPL

START SUBROUTINE SPECTR FOR

TEST 415 B-C DISPL

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.50559

| OMEGA | S(OMEGA) | FREQUENCY | S(FREG) | AUTOCOR |
|-------|----------|-----------|---------|---------|
| 0.000000 | 0.554908 | 0.000000 | 3.737514 | 2.371173 |
| 0.026720 | 0.465624 | 0.004253 | 2.550732 | -0.667261 |
| 0.053440 | 0.281513 | 0.008505 | 1.768758 | -0.854342 |
| 0.080155 | 0.210854 | 0.012758 | 1.325086 | 1.311237 |
| 0.106875 | 0.227353 | 0.017010 | 1.429560 | -0.356470 |
| 0.133595 | 0.276335 | 0.021263 | 1.736289 | -0.570966 |
| 0.160315 | 0.332828 | 0.025516 | 2.091219 | 0.509312 |
| 0.187035 | 0.344735 | 0.029768 | 2.166031 | 0.064264 |
| 0.213758 | 0.256815 | 0.034021 | -1.864571 | -0.204175 |
| 0.240478 | 0.253023 | 0.038273 | 1.589789 | 0.070549 |
| 0.267158 | 0.228565 | 0.042526 | 1.436113 | 0.129168 |
| 0.293518 | 0.208656 | 0.046778 | 1.311274 | -0.125947 |
| 0.320638 | 0.225465 | 0.051031 | 1.316165 | -0.064616 |
| 0.347357 | 0.231842 | 0.055284 | 1.456706 | 0.116705 |
| 0.374077 | 0.409112 | 0.055536 | 2.570526 | -0.024660 |
| 0.400757 | 0.723052 | 0.063785 | 4.543321 | -0.005767 |
| 0.427517 | 0.654643 | 0.068041 | 4.113243 | 0.078606 |
| 0.454237 | 0.326695 | 0.072254 | 2.052708 | 0.040689 |
| 0.480956 | 0.242568 | 0.076547 | 1.524057 | 0.023052 |
| 0.507676 | 0.301444 | 0.082759 | 1.854029 | -0.033285 |
| 0.534396 | 0.304545 | 0.085052 | 1.913535 | -0.042978 |
| 0.561116 | 0.255684 | 0.089304 | 1.612751 | 0.058228 |
| 0.587836 | 0.265028 | 0.093557 | 1.656351 | 0.025376 |
| 0.614555 | 0.278754 | 0.097805 | 1.751463 | -0.028553 |
| 0.641275 | 0.234358 | 0.102062 | 1.472515 | 0.031427 |
| 0.667995 | 0.247645 | 0.106315 | 1.556026 | 0.133129 |
| 0.694715 | 0.315733 | 0.110567 | 2.088541 | -0.135903 |
| 0.721434 | 0.483679 | 0.114820 | 3.039045 | -0.022061 |
| 0.748154 | 0.817502 | 0.119072 | 5.136518 | 0.174470 |
| 0.774874 | 1.038254 | 0.123325 | 6.523510 | -0.275683 |
| 0.801554 | 1.011665 | 0.127578 | 6.375356 | 0.104697 |
| 0.828314 | 1.345921 | 0.131830 | 8.456542 | 0.286780 |
| 0.855034 | 2.030263 | 0.136083 | 12.756517 | -0.381645 |
| 0.881753 | 2.651044 | 0.140335 | 16.508325 | 0.180407 |

| | | | | |
|-------|----------|-----------|---------|---------|
| 0.908473 | 3.550264 | 0.144588 | 22.306961 | 0.211709 |
| 0.935153 | 5.027540 | 0.148841 | 31.551476 | -0.389571 |
| 0.961513 | 5.728240 | 0.153053 | 35.951552 | 0.150597 |
| 0.988632 | 4.572083 | 0.157346 | 31.240524 | 0.126536 |
| 1.015368 | 5.545546 | 0.161598 | 34.868820 | -0.158997 |
| 1.042072 | 6.858553 | 0.165851 | 43.347357 | 0.100019 |
| 1.068751 | 5.864014 | 0.170103 | 36.467657 | 0.027147 |
| 1.095511 | 3.677364 | 0.174356 | 23.125560 | -0.040658 |
| 1.122231 | 4.011952 | 0.178605 | 25.220084 | 0.014810 |
| 1.148952 | 4.521648 | 0.182861 | 38.583630 | -0.023926 |
| 1.175671 | 3.487120 | 0.187114 | 21.510217 | 0.012519 |
| 1.202391 | 2.287714 | 0.191366 | 14.374130 | -0.039157 |
| 1.225111 | 2.662164 | 0.195619 | 17.583505 | 0.014046 |
| 1.255830 | 2.756128 | 0.195872 | 17.566588 | 0.284066 |
| 1.282550 | 1.668563 | 0.204124 | 10.421056 | -0.045231 |
| 1.309270 | 1.114880 | 0.208377 | 7.004554 | -0.023176 |
| 1.335990 | 1.087296 | 0.212685 | 6.831679 | 0.059559 |
| 1.362705 | 0.824118 | 0.216882 | 5.826405 | -0.014132 |
| 1.385425 | 0.656805 | 0.221135 | 4.376271 | -0.120074 |
| 1.416145 | 0.575297 | 0.225387 | 3.613442 | 0.107247 |
| 1.442865 | 0.533391 | 0.225640 | 3.334829 | 0.088278 |
| 1.465860 | 0.480983 | 0.233852 | 3.022102 | -0.131386 |
| 1.456308 | 0.507113 | 0.238145 | 3.186287 | 0.064189 |
| 1.523028 | 0.547885 | 0.242357 | 3.447461 | 0.142611 |
| 1.545747 | 0.515288 | 0.246660 | 3.237647 | -0.208288 |
| 1.576468 | 0.455696 | 0.250563 | 3.880814 | 0.063558 |
| 1.603188 | 0.423447 | 0.255155 | 2.668594 | 0.203364 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT 61 (1.60319)
ZEROTH MOMENT = 2.37117
SECOND MOMENT = 7.87831
FOURTH MOMENT = 3.31766
BROADNESS FACTOR (SGRT(1.0-F2**2/(F0*F4))) = 0.39868

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 6.18948
4.0*RMS*SGRT(1.0-BROADC**2/2.0) = 5.98963

TABLE 19

TEST 412 WAVAINC

REAL PEAK =          12354.18537CTS
INTEGER PEAK =       12354 CTS
RMS VALUE            1.41256 PHYSICAL UNITS

START SMOOTHING SPECTR FOR

TEST 412 WAVAINC

VELOCITY  =    0.00000 FPS
LAGS      =  60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55559

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCOR |
|---|---|---|---|---|
| 0.00000 | 0.502431 | 0.000000 | 5.657574 | 1.996452 |
| 0.026720 | 0.849815 | 0.004253 | 5.339569 | -0.712348 |
| 0.053442 | 0.864288 | 0.008505 | 5.453468 | 0.110528 |
| 0.082155 | 0.831784 | 0.012758 | 5.226252 | 0.314791 |
| 0.106875 | 0.872413 | 0.017018 | 5.481535 | -0.058435 |
| 0.133595 | 0.878276 | 0.021263 | 5.518365 | 0.012313 |
| 0.160319 | 0.758677 | 0.025516 | 5.018638 | 0.277785 |
| 0.187039 | 0.661866 | 0.029768 | 4.158626 | 0.015039 |
| 0.213758 | 0.574465 | 0.034021 | 3.685470 | -0.051025 |
| 0.240478 | 0.505513 | 0.038273 | 3.176265 | 0.044798 |
| 0.267198 | 0.387362 | 0.042526 | 2.433868 | -0.002344 |
| 0.293518 | 0.312783 | 0.046778 | 1.965271 | -0.059967 |
| 0.320638 | 0.320762 | 0.051031 | 2.015428 | -0.053818 |
| 0.347357 | 0.383558 | 0.055284 | 2.410216 | 0.013267 |
| 0.374077 | 0.461216 | 0.059536 | 2.857527 | -0.002268 |
| 0.400797 | 0.501205 | 0.063785 | 3.145165 | 0.005617 |
| 0.427517 | 0.515745 | 0.068041 | 3.242648 | 0.025657 |
| 0.454237 | 0.525781 | 0.072294 | 3.283247 | -0.028662 |
| 0.480956 | 0.466853 | 0.076547 | 2.933327 | -0.044943 |
| 0.507676 | 0.392664 | 0.080799 | 2.454617 | 0.051580 |
| 0.534396 | 0.354738 | 0.085052 | 2.228887 | 0.000194 |
| 0.561116 | 0.376893 | 0.089304 | 2.366627 | 0.004580 |
| 0.587836 | 0.409518 | 0.093557 | 2.575550 | -0.030312 |
| 0.614555 | 0.509797 | 0.097809 | 3.196866 | 0.017643 |
| 0.641275 | 0.682520 | 0.102062 | 4.252788 | 0.021474 |
| 0.667995 | 0.861252 | 0.106315 | 5.411641 | 0.038217 |
| 0.694715 | 0.845647 | 0.110567 | 5.313356 | -0.033151 |
| 0.721434 | 0.623393 | 0.114820 | 3.516851 | -0.023282 |
| 0.748154 | 0.687452 | 0.119072 | 3.816735 | 0.058149 |
| 0.774874 | 0.866446 | 0.123325 | 5.456669 | -0.024675 |
| 0.801594 | 1.031947 | 0.127578 | 6.483514 | -0.009635 |
| 0.828314 | 0.975148 | 0.131830 | 6.126586 | 0.028954 |
| 0.855034 | 0.528116 | 0.136083 | 5.831522 | -0.068711 |
| 0.881753 | 1.124745 | 0.140335 | 7.066583 | 0.084354 |

| 0.908473 | 1.360978 | 0.144588 | 8.551277 | -0.037985 |
| 0.935193 | 1.556510 | 0.148841 | 10.033684 | -0.017683 |
| 0.961913 | 1.586236 | 0.153053 | 11.577232 | 0.009445 |
| 0.988632 | 1.578521 | 0.157346 | 12.431250 | 0.029912 |
| 1.015352 | 2.131148 | 0.161558 | 13.350359 | -0.025877 |
| 1.042072 | 2.366993 | 0.165851 | 14.834558 | 0.001253 |
| 1.068791 | 2.142715 | 0.170103 | 13.463278 | 0.037087 |
| 1.095511 | 1.853447 | 0.174356 | 11.856877 | -0.012773 |
| 1.122231 | 2.055397 | 0.178609 | 13.152658 | -0.002846 |
| 1.148952 | 2.348464 | 0.182861 | 14.755836 | 0.039831 |
| 1.175671 | 2.253070 | 0.187114 | 14.156455 | -0.020829 |
| 1.202391 | 2.035415 | 0.191366 | 12.814224 | -0.023463 |
| 1.229111 | 2.671815 | 0.195619 | 13.017554 | 0.047453 |
| 1.255830 | 2.245795 | 0.199872 | 14.135678 | -0.011067 |
| 1.282550 | 2.855026 | 0.204124 | 15.186679 | -0.018753 |
| 1.329270 | 1.883577 | 0.208377 | 11.834665 | -0.013305 |
| 1.335990 | 2.062175 | 0.212629 | 12.557045 | 0.028695 |
| 1.362709 | 2.281736 | 0.216882 | 14.356672 | -0.001489 |
| 1.389429 | 2.148542 | 0.221135 | 13.451532 | -0.013504 |
| 1.416145 | 1.887583 | 0.225387 | 11.862549 | 0.033409 |
| 1.442865 | 1.520051 | 0.229640 | 12.464434 | 0.000734 |
| 1.469588 | 2.026468 | 0.233892 | 12.732676 | -0.036088 |
| 1.496328 | 1.540315 | 0.238145 | 12.225856 | 0.046237 |
| 1.523028 | 1.521284 | 0.242397 | 15.071781 | 0.007651 |
| 1.565747 | 1.518282 | 0.246650 | 12.058421 | -0.038136 |
| 1.576468 | 1.728767 | 0.252503 | 10.849554 | 0.003969 |
| 1.603188 | 1.585092 | 0.255155 | 5.584329 | 0.034975 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT B(  1.483315)
    ZEROTH MOMENT =         1.55648
    SECOND MOMENT =         0.44083
    FOURTH MOMENT =         4.06876
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4)) =        0.51579

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4.0*M0 =         0.05184
    4.0*M0*SQRT(1.0-BROAD**2/2.0) =        0.06883

TABLE 20

TEST #15 HAVLEE

REAL MEAN = 12557.03510 CTS
INTEGER MEAN = 12557 CTS
RMS VALUE = 8.516657 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST #15 HAVLEE

VELOCITY = 0.00222 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCOR |
|-------|----------|-----------|---------|---------|
| 0.00000 | 5.005917 | 0.00000 | 56.610577 | 0.840832 |
| 0.026720 | 4.771530 | 0.004253 | 29.582408 | 0.164523 |
| 0.053440 | 0.484487 | 0.008505 | 3.018951 | 0.196133 |
| 0.080155 | 0.449757 | 0.012758 | 2.805904 | 0.360715 |
| 0.106875 | 0.454105 | 0.017016 | 2.853248 | 0.259106 |
| 0.133595 | 0.426008 | 0.021263 | 2.677944 | 0.280448 |
| 0.160315 | 0.395185 | 0.025516 | 2.568178 | 0.264551 |
| 0.187035 | 0.338041 | 0.029768 | 2.123572 | 0.271478 |
| 0.213755 | 0.265855 | 0.034021 | 1.670415 | 0.195524 |
| 0.240478 | 0.223270 | 0.038273 | 1.402847 | 0.243366 |
| 0.267158 | 0.187068 | 0.042526 | 1.175385 | 0.237216 |
| 0.293918 | 0.168588 | 0.046778 | 1.011518 | 0.211772 |
| 0.320638 | 0.178265 | 0.051031 | 1.069805 | 0.212251 |
| 0.347357 | 0.068857 | 0.055284 | 1.312268 | 0.193608 |
| 0.374077 | 0.247865 | 0.059536 | 1.557384 | 0.269141 |
| 0.400797 | 0.265441 | 0.063789 | 1.630115 | 0.218266 |
| 0.427517 | 0.250552 | 0.068041 | 1.576782 | 0.236771 |
| 0.454237 | 0.232955 | 0.072294 | 1.463701 | 0.234474 |
| 0.480956 | 0.202933 | 0.076547 | 1.002458 | 0.222224 |
| 0.507676 | 0.183508 | 0.080799 | 1.155531 | 0.248259 |
| 0.534356 | 0.195342 | 0.085052 | 1.227370 | 0.196728 |
| 0.561116 | 0.202135 | 0.089304 | 1.270850 | 0.261887 |
| 0.587836 | 0.215403 | 0.093557 | 1.353416 | 0.215580 |
| 0.614555 | 0.244381 | 0.097809 | 1.535451 | 0.206560 |
| 0.641275 | 0.289645 | 0.102062 | 1.819919 | 0.252014 |
| 0.667995 | 0.348371 | 0.106315 | 2.188880 | 0.255388 |
| 0.694715 | 0.336411 | 0.110567 | 2.113735 | 0.178522 |
| 0.721434 | 0.257654 | 0.114820 | 1.619140 | 0.227851 |
| 0.748154 | 0.245034 | 0.119072 | 1.539553 | 0.276544 |
| 0.774874 | 0.326573 | 0.123325 | 2.052429 | 0.193851 |
| 0.801594 | 0.382961 | 0.127578 | 2.393650 | 0.228642 |
| 0.828314 | 0.365180 | 0.131830 | 2.319623 | 0.244296 |
| 0.855034 | 0.356160 | 0.136083 | 2.237820 | 0.285311 |
| 0.881753 | 0.531584 | 0.140335 | 3.340038 | 0.248595 |

| 0.908473 | 0.887005 | 0.144588 | 5.078664 | 0.207776 |
| 0.935193 | 0.795755 | 0.148841 | 4.995875 | 0.235071 |
| 0.961913 | 0.632536 | 0.153093 | 3.974335 | 0.236487 |
| 0.988632 | 0.576860 | 0.157346 | 3.624520 | 0.213859 |
| 1.015352 | 0.671846 | 0.161598 | 4.221332 | 0.235975 |
| 1.042072 | 0.755200 | 0.165851 | 4.596351 | 0.224686 |
| 1.068791 | 0.700126 | 0.170103 | 4.398855 | 0.225440 |
| 1.095511 | 0.471618 | 0.174356 | 2.963261 | 0.209375 |
| 1.122231 | 0.457126 | 0.178609 | 2.872211 | 0.243338 |
| 1.148951 | 0.618129 | 0.182861 | 3.883753 | 0.229408 |
| 1.175671 | 0.595685 | 0.187114 | 3.742881 | 0.198718 |
| 1.202391 | 0.411688 | 0.191366 | 2.586673 | 0.240431 |
| 1.229111 | 0.292053 | 0.195619 | 1.835023 | 0.208996 |
| 1.255830 | 0.318134 | 0.199872 | 1.546628 | 0.229227 |
| 1.282550 | 0.327064 | 0.204124 | 2.055001 | 0.200991 |
| 1.309270 | 0.307489 | 0.208377 | 1.931508 | 0.231910 |
| 1.335990 | 0.473058 | 0.212629 | 2.572314 | 0.224230 |
| 1.362705 | 0.641046 | 0.216882 | 4.027812 | 0.200716 |
| 1.389429 | 0.533677 | 0.221135 | 3.353190 | 0.216485 |
| 1.416145 | 0.392450 | 0.225387 | 2.483257 | 0.243230 |
| 1.442865 | 0.253694 | 0.229640 | 1.845333 | 0.206771 |
| 1.469585 | 0.235202 | 0.233892 | 1.477820 | 0.199335 |
| 1.496305 | 0.270088 | 0.238145 | 1.747275 | 0.236677 |
| 1.523028 | 0.335356 | 0.242397 | 2.107382 | 0.218592 |
| 1.549747 | 0.385608 | 0.246650 | 2.259438 | 0.207367 |
| 1.576468 | 0.318151 | 0.250903 | 1.999251 | 0.206439 |
| 1.603188 | 0.264392 | 0.255155 | 1.661227 | 0.236686 |

THE SPECTRAL POINTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S( 1.603153)
 ZEROTH MOMENT = 0.84883
 SECOND MOMENT = 0.57044
 FOURTH MOMENT = 0.84732
 BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4)) = 0.73787

SIGNIFICANT WAVE HEIGHT, H(1/3)
 4*RMS = 3.06788
 4*RMS*SQRT(1-PHYSICAL**2/2.0) = 3.13833

TABLE 21

TEST #12  E-C CISFL

REAL MEAN =        2615.67553CTS
INTEGER MEAN =     2616 CTS
RMS VALUE          5.56183 PHYSICAL UNITS

START SEROLTINE SPECTR FCR

TEST #12  E-C CISFL

VELOCITY  =    8.88888 FPS
LAGS      =  89
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =  1.55559

| CMEGA | S(CMEGA) | FREQUENCY | S(FREQ) | AUTOCCR |
|-------|----------|-----------|---------|---------|
| 0.000000 | 0.572087 | 0.000000 | 3.554530 | -6.665839 |
| 0.026726 | 0.511522 | 0.004253 | 3.213925 | -1.861302 |
| 0.055448 | 0.436766 | 0.008505 | 2.744284 | -4.097769 |
| 0.082155 | 0.486329 | 0.012758 | 2.553038 | 3.686749 |
| 0.108875 | 0.373388 | 0.017010 | 2.346028 | 0.919749 |
| 0.133555 | 0.387833 | 0.021263 | 2.436829 | -2.893983 |
| 0.160315 | 0.421774 | 0.025516 | 2.650286 | 0.593855 |
| 0.187035 | 0.385973 | 0.029768 | 2.452875 | 1.528234 |
| 0.213758 | 0.337157 | 0.034021 | 2.118422 | -2.654893 |
| 0.242478 | 0.305305 | 0.038273 | 1.918286 | -2.626687 |
| 0.267158 | 0.287810 | 0.042526 | 1.808366 | 0.448981 |
| 0.293918 | 0.346885 | 0.046778 | 2.175944 | 0.383422 |
| 0.320638 | 0.473971 | 0.051031 | 2.978045 | -2.303521 |
| 0.347357 | 0.646765 | 0.055284 | 4.063395 | -0.374760 |
| 0.374077 | 0.551045 | 0.059536 | 6.226518 | 0.284693 |
| 0.400757 | 1.196451 | 0.063789 | 7.517776 | 0.147516 |
| 0.427517 | 0.535157 | 0.068041 | 5.876015 | -0.244199 |
| 0.454237 | 0.554204 | 0.072294 | 3.733454 | 0.201393 |
| 0.480956 | 0.565854 | 0.076547 | 3.176372 | 0.186747 |
| 0.507676 | 0.561028 | 0.080759 | 3.525045 | -0.403742 |
| 0.534356 | 0.770621 | 0.085052 | 4.841556 | 0.122710 |
| 0.561116 | 0.997100 | 0.089304 | 6.264967 | 0.351496 |
| 0.587836 | 1.021983 | 0.093557 | 6.421305 | -0.513495 |
| 0.614555 | 0.993139 | 0.097809 | 6.240078 | -0.190258 |
| 0.641275 | 1.029880 | 0.102062 | 6.470523 | 0.837376 |
| 0.667995 | 1.262951 | 0.106315 | 7.935354 | -2.205172 |
| 0.694715 | 1.324165 | 0.110567 | 8.319576 | -0.832245 |
| 0.721434 | 1.188934 | 0.114820 | 7.470294 | 0.776994 |
| 0.748154 | 2.123932 | 0.119072 | 13.345057 | 0.322680 |
| 0.774874 | 4.554099 | 0.123325 | 31.127518 | -1.103254 |
| 0.801594 | 8.428513 | 0.127578 | 52.560415 | 0.549520 |
| 0.828314 | 11.515315 | 0.131830 | 72.356855 | 2.631504 |
| 0.855034 | 14.365709 | 0.136083 | 90.268405 | -1.058160 |
| 0.881753 | 15.323046 | 0.140335 | 96.277527 | 0.323135 |

| 0.908473 | 18.746848 | 0.144588 | 117.784882 | 0.768650 |
| 0.935193 | 25.004574 | 0.148841 | 157.112886 | -0.872647 |
| 0.961913 | 21.546884 | 0.153093 | 137.856332 | -0.820574 |
| 0.988632 | 13.127558 | 0.157346 | 82.483124 | 0.610209 |
| 1.015352 | 12.272588 | 0.161598 | 77.116547 | -0.309884 |
| 1.042072 | 17.135574 | 0.165851 | 107.665585 | -0.193519 |
| 1.068751 | 15.855785 | 0.170103 | 99.501291 | 0.173358 |
| 1.095511 | 5.486833 | 0.174356 | 55.607529 | 0.232223 |
| 1.122231 | 7.955437 | 0.178609 | 47.746672 | -0.136736 |
| 1.148952 | 8.016525 | 0.182861 | 50.381862 | -0.236868 |
| 1.175671 | 5.565557 | 0.187114 | 34.557078 | 0.238727 |
| 1.202391 | 2.082195 | 0.191366 | 15.177536 | 0.109587 |
| 1.229111 | 2.573852 | 0.195619 | 18.688257 | -0.221465 |
| 1.255830 | 2.750854 | 0.199872 | 17.284134 | -0.213549 |
| 1.282550 | 1.767073 | 0.204124 | 11.102844 | 0.339389 |
| 1.309270 | 1.471671 | 0.208377 | 9.245040 | -0.156762 |
| 1.335990 | 1.246783 | 0.212629 | 7.856557 | 0.375018 |
| 1.362705 | 0.976670 | 0.216882 | 6.136558 | 0.362737 |
| 1.389425 | 0.513744 | 0.221135 | 8.741281 | 0.188642 |
| 1.416145 | 0.763525 | 0.225387 | 4.787367 | -0.167696 |
| 1.442865 | 0.584063 | 0.229640 | 3.481981 | 0.132177 |
| 1.469585 | 0.454675 | 0.233892 | 3.187066 | 0.264109 |
| 1.496305 | 0.402324 | 0.238145 | 2.504868 | -0.348047 |
| 1.523026 | 0.387587 | 0.242397 | 2.437756 | 0.001312 |
| 1.549747 | 0.403188 | 0.246650 | 2.533285 | 0.292419 |
| 1.576468 | 0.451231 | 0.250902 | 2.616135 | -0.398395 |
| 1.603188 | 0.509631 | 0.255155 | 3.198939 | 0.091760 |

THE SPECTRAL MCMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(  1.60318)
     ZEROTH MOMENT =        0.66884
     SECOND MOMENT =        0.32406
     FOURTH MOMENT =        0.88567
     BRCADNESS FACTOR (SQRT(1-P2**2/(P0*P4)) =        0.38333

     SIGNIFICANTWAVE HEIGHT, H(1/3)
          4*SQRT(RMS) =        18.02731
          4*SQRT(SQRT(1-P*HREAD**2/2*P0) =        5.55889

TABLE 22

TEST #18 WAVHIRE

REAL MEAN = 110FP.3E2PICTS
INTEGER MEAN = 11FFF CIS
RMS VALUE = 1.53AE1 PHYSICAL UNITS

START SLEACLTINF SPECTR FOR

TLET #18 WAVHIRE

VELOCITY = 0.0000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2.SEC
SAMPLING RATE = 1.55555

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCORR |
|---|---|---|---|---|

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT 61 1.00(315)
ZEROTH MOMENT = 3.74831
SECOND MOMENT = 4.12558
FOURTH MOMENT = 0.01431
BROADNESS FACTOR (SQRT(1.0*F2**2/(F0*F4))) = 0.46889

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*SQRT = 7.73806
4.0*SQRT*HEIGHT(1.0*F2/(5.0*F) = 7.38759

**TABLE 23**

TEST 912 WAYLEE

-40-

START SMOOTHING SPECTRA FOR

TEST 912 WAYLEE

VELOCITY =    0.00000 FPS
LAGS    =  60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55555

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCOR |
|---|---|---|---|---|
| 0.00000 | 5.464767 | 0.00000 | 25.554543 | 1.391243 |
| 0.026720 | 4.573760 | 0.004253 | 31.251053 | 0.004236 |
| 0.053440 | 0.367445 | 0.00000 | 2.306724 | -0.223064 |
| 0.080165 | 0.305730 | 0.012755 | 1.544013 | 0.604906 |
| 0.106825 | 0.322664 | 0.017010 | 2.022710 | 0.440105 |
| 0.133555 | 0.256381 | 0.021263 | 1.610888 | 0.059272 |
| 0.160315 | 0.230142 | 0.025516 | 1.446028 | 0.193041 |
| 0.187035 | 0.235734 | 0.029766 | 1.506255 | 0.427960 |
| 0.213755 | 0.200887 | 0.034023 | 1.255511 | 0.213537 |
| 0.240498 | 0.174058 | 0.038273 | 1.093875 | 0.097401 |
| 0.267215 | 0.164688 | 0.042526 | 1.034766 | 0.347116 |
| 0.293935 | 0.175346 | 0.046778 | 1.101733 | 0.364646 |
| 0.320638 | 0.191547 | 0.051031 | 1.206641 | 0.114694 |
| 0.347367 | 0.175477 | 0.055284 | 1.102556 | 0.399221 |
| 0.374077 | 0.141631 | 0.059536 | 0.885654 | 0.344830 |
| 0.400757 | 0.134424 | 0.063789 | 0.844611 | 0.248556 |
| 0.427517 | 0.146533 | 0.068041 | 0.923809 | 0.194768 |
| 0.454237 | 0.155860 | 0.072854 | 1.004431 | 0.205189 |
| 0.480556 | 0.164438 | 0.076547 | 1.033155 | 0.335529 |
| 0.507676 | 0.160886 | 0.080755 | 1.037264 | 0.246461 |
| 0.534356 | 0.255668 | 0.085002 | 1.630512 | 0.158309 |
| 0.561116 | 0.384782 | 0.085304 | 2.417151 | 0.283411 |
| 0.587736 | 0.443628 | 0.093567 | 2.783628 | 0.301174 |
| 0.614556 | 0.510574 | 0.097805 | 3.210546 | 0.175005 |
| 0.641275 | 0.562591 | 0.102007 | 3.534062 | 0.245872 |
| 0.667995 | 0.682418 | 0.106315 | 4.287761 | 0.305128 |
| 0.656715 | 0.517805 | 0.110567 | 5.762553 | 0.164927 |
| 0.721434 | 0.835558 | 0.114820 | 5.149518 | 0.225527 |
| 0.748154 | 0.562408 | 0.119072 | 3.533673 | 0.331169 |
| 0.774874 | 0.822776 | 0.123325 | 5.165753 | 0.231798 |
| 0.801554 | 1.152980 | 0.127571 | 7.432879 | 0.195949 |
| 0.828314 | 1.367182 | 0.131830 | 8.587423 | 0.251816 |
| 0.855034 | 2.066973 | 0.136083 | 12.585648 | 0.269293 |
| 0.881753 | 2.568366 | 0.140335 | 16.660787 | 0.280131 |

| 0.508473 | 3.183905 | 0.144888 | 15.817053 | 0.184194 |
| 0.535153 | 2.577487 | 0.148841 | 16.154641 | 0.220369 |
| 0.561513 | 1.595518 | 0.153053 | 12.565519 | 0.306500 |
| 0.588632 | 1.587176 | 0.157346 | 5.572523 | 0.252618 |
| 1.015352 | 1.582108 | 0.01558 | 5.540675 | 0.185005 |
| 1.042072 | 1.585085 | 0.165851 | 5.544816 | 0.202481 |
| 1.066751 | 1.186567 | 0.170103 | 7.877628 | 0.303439 |
| 1.255511 | 0.766161 | 0.174356 | 4.776234 | 0.251861 |
| 1.122331 | 0.768805 | 0.178685 | 4.830571 | 0.169066 |
| 1.148552 | 1.012552 | 0.182861 | 6.364616 | 0.251181 |
| 1.175671 | 1.142468 | 0.187114 | 7.178317 | 0.223959 |
| 1.202351 | 0.580303 | 0.151566 | 6.155428 | 0.221809 |
| 1.229111 | 0.826141 | 0.155619 | 5.150756 | 0.244432 |
| 1.255830 | 0.750760 | 0.155878 | 4.568453 | 0.247399 |
| 1.282550 | 0.683015 | 0.264184 | 4.103048 | 0.184024 |
| 1.305270 | 0.466467 | 0.206377 | 8.530858 | 0.238458 |
| 1.335550 | 0.485347 | 0.212625 | 3.074655 | 0.268623 |
| 1.362745 | 0.538882 | 0.216887 | 3.388055 | 0.190931 |
| 1.385455 | 0.511482 | 0.221135 | 3.213734 | 0.276796 |
| 1.416145 | 0.523888 | 0.224587 | 3.251868 | 0.268962 |
| 1.442865 | 0.462521 | 0.225644 | 1.588615 | 0.219644 |
| 1.465585 | 0.342824 | 0.233855 | 5.154084 | 0.216677 |
| 1.456308 | 0.272746 | 0.238145 | 1.713714 | 0.217113 |
| 1.523028 | 0.266936 | 0.242357 | 1.672079 | 0.230798 |
| 1.545747 | 0.266728 | 0.246650 | 1.814130 | 0.228791 |
| 1.576568 | 0.318665 | 0.250162 | 1.849261 | 0.247878 |
| 1.525568 | 0.265555 | 0.255162 | 1.544881 | 0.247878 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(    1.00315)
    ZEROTH MOMENT =        1.35384
    SECOND MOMENT =        1.97668
    FOURTH MOMENT =        1.37158
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) =        0.61797

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4.0*RMS =        4.71884
    4.0*RMS*SQRT(1.0-PHI*CAP**2/F-V) =        4.34376

TEST 51° B-C DISPL

HEAL MEAN = 1743.61257CTS
INTEGER MEAN = 1744 CTS
RMS VALUE = 0.94377 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST 51° B-C DISPL

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55559

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCOR |
|-------|----------|-----------|---------|---------|
| 0.00000 | 0.630778 | 0.000000 | 3.963293 | 0.890692 |
| 0.026720 | 0.562915 | 0.004253 | 3.159536 | -0.302092 |
| 0.053440 | 0.328663 | 0.008506 | 1.935616 | -0.146444 |
| 0.080155 | 0.214154 | 0.012758 | 1.345823 | 0.314088 |
| 0.106875 | 0.178133 | 0.017010 | 1.119240 | -0.040693 |
| 0.133595 | 0.157555 | 0.021263 | 0.589572 | -0.080007 |
| 0.160315 | 0.164911 | 0.025516 | 1.036164 | 0.088223 |
| 0.187039 | 0.155360 | 0.029768 | 1.227486 | 0.025340 |
| 0.213758 | 0.152658 | 0.034021 | 1.210757 | -0.023595 |
| 0.240478 | 0.163867 | 0.038273 | 1.025626 | 0.242265 |
| 0.267198 | 0.144678 | 0.042526 | 0.505036 | 0.021543 |
| 0.293918 | 0.147010 | 0.046778 | 0.523650 | -0.019178 |
| 0.320638 | 0.161056 | 0.051031 | 1.017221 | 0.047761 |
| 0.347357 | 0.155982 | 0.055284 | 1.005156 | 0.006531 |
| 0.374077 | 0.138716 | 0.059536 | 0.821310 | 0.025508 |
| 0.400757 | 0.122600 | 0.063789 | 0.770317 | -0.018095 |
| 0.427517 | 0.156752 | 0.068041 | 0.947201 | 0.027251 |
| 0.454237 | 0.166640 | 0.072294 | 1.009332 | 0.081446 |
| 0.480956 | 0.141125 | 0.076547 | 0.886714 | -0.090487 |
| 0.507676 | 0.130657 | 0.080799 | 0.821155 | 0.017642 |
| 0.534396 | 0.144661 | 0.085052 | 0.908530 | 0.123938 |
| 0.561116 | 0.152277 | 0.089304 | 0.556785 | -0.080370 |
| 0.587836 | 0.151165 | 0.093557 | 0.949800 | -0.038290 |
| 0.614555 | 0.181715 | 0.097809 | 1.141772 | 0.118658 |
| 0.641275 | 0.224421 | 0.102062 | 1.410278 | -0.017025 |
| 0.667995 | 0.237047 | 0.106315 | 1.489408 | -0.123930 |
| 0.694715 | 0.214205 | 0.110567 | 1.345885 | 0.145466 |
| 0.721434 | 0.260690 | 0.114820 | 1.637566 | 0.001569 |
| 0.748154 | 0.415294 | 0.119072 | 2.634500 | -0.107309 |
| 0.774874 | 0.532203 | 0.123325 | 3.343929 | 0.087651 |
| 0.801594 | 0.586577 | 0.127578 | 3.685570 | 0.052024 |
| 0.828314 | 0.813352 | 0.131830 | 5.110441 | -0.056089 |
| 0.855034 | 0.547076 | 0.136083 | 5.550655 | -0.007533 |
| 0.881753 | 0.661994 | 0.140335 | 4.159433 | 0.043314 |

| 0.908473 | 0.425853 | 0.144588 | 2.700844 | 0.013963 |
| 0.935193 | 0.566532 | 0.148841 | 6.072898 | -0.040233 |
| 0.961913 | 1.565733 | 0.153093 | 12.376159 | 0.040124 |
| 0.988632 | 2.034428 | 0.157346 | 12.782685 | -0.002826 |
| 1.015352 | 1.218467 | 0.161558 | 7.605592 | 0.007155 |
| 1.042072 | 0.821056 | 0.165851 | 5.158847 | -0.029615 |
| 1.068751 | 1.230667 | 0.170103 | 7.732510 | 0.019960 |
| 1.095511 | 1.736029 | 0.174356 | 10.907789 | -0.016982 |
| 1.122231 | 1.656637 | 0.178609 | 10.666285 | 0.004911 |
| 1.148552 | 1.236215 | 0.182861 | 7.767365 | 0.023143 |
| 1.175671 | 0.867388 | 0.187114 | 5.575626 | -0.026102 |
| 1.202351 | 0.852634 | 0.191366 | 5.357255 | 0.004509 |
| 1.229111 | 0.822571 | 0.195619 | 5.168366 | 0.025004 |
| 1.255830 | 0.747554 | 0.199872 | 4.697222 | -0.006672 |
| 1.282550 | 0.718303 | 0.204124 | 4.513232 | -0.007055 |
| 1.309270 | 0.837888 | 0.208377 | 5.264569 | 0.005361 |
| 1.335990 | 0.953454 | 0.212629 | 5.990730 | 0.021808 |
| 1.362709 | 0.745152 | 0.216882 | 4.707659 | -0.007378 |
| 1.389429 | 0.458706 | 0.221135 | 3.083156 | -0.028285 |
| 1.416149 | 0.457076 | 0.225387 | 2.871889 | 0.076353 |
| 1.442869 | 0.455148 | 0.229640 | 3.136238 | -0.032796 |
| 1.469588 | 0.461367 | 0.233892 | 3.024517 | -0.028787 |
| 1.496308 | 0.452548 | 0.238145 | 3.094748 | 0.050750 |
| 1.523028 | 0.457174 | 0.242397 | 2.872567 | 0.022422 |
| 1.549747 | 0.353466 | 0.246650 | 2.472219 | -0.045278 |
| 1.576468 | 0.498102 | 0.250903 | 3.117480 | 0.036339 |
| 1.603188 | 0.553364 | 0.255155 | 3.728813 | 0.055621 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT 51   1.603188
    ZEROTH MOMENT =        0.85009
    SECOND MOMENT =        1.00003
    FOURTH MOMENT =        1.46568
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) =        0.48462

SIGNIFICANT WAVE HEIGHT, H(1/3)
    4.00*RMS =        3.77588
    4.00*RMS*SQRT(1-M-FAC/4.0*E/2.0) =        3.54649

TABLE 25

TEST 519 WAVERIDE

REAL MEAN = 5823.51172CTS
INTEGER PEAK = 5824 CTS
RMS VALUE = 1.48558 PHYSICAL UNITS

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START SUBROUTINE SPECTR FOR

TEST 519 WAVERIDE

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55559

| OMEGA | S(OMEGA) | FREQUENCY | S(FREQ) | AUTOCOR |
|---|---|---|---|---|
| 0.002000 | 1.131644 | 0.000000 | 7.110331 | 1.986901 |
| 0.026720 | 0.923945 | 0.004253 | 5.805344 | -0.626096 |
| 0.053440 | 0.712348 | 0.008505 | 4.475816 | 0.036586 |
| 0.080155 | 0.665725 | 0.012758 | 4.208630 | 0.267635 |
| 0.106875 | 0.570175 | 0.017010 | 3.582537 | -0.303307 |
| 0.133599 | 0.425170 | 0.021263 | 2.671420 | 0.039246 |
| 0.160315 | 0.355137 | 0.025516 | 2.256526 | 0.131451 |
| 0.187035 | 0.433863 | 0.025768 | 2.726170 | 0.026022 |
| 0.213758 | 0.614616 | 0.034021 | 3.861749 | -0.015527 |
| 0.240478 | 0.800706 | 0.038273 | 5.060881 | 0.061142 |
| 0.267198 | 0.738324 | 0.042526 | 4.639826 | -0.017053 |
| 0.293918 | 0.618555 | 0.046778 | 3.886453 | 0.073475 |
| 0.320638 | 0.718644 | 0.051031 | 4.516630 | 0.023112 |
| 0.347357 | 0.754582 | 0.055284 | 4.741179 | 0.031510 |
| 0.374077 | 0.642525 | 0.055536 | 4.037181 | 0.067995 |
| 0.400797 | 0.684465 | 0.063789 | 4.300644 | -0.014506 |
| 0.427517 | 0.909055 | 0.068041 | 5.711787 | -0.019501 |
| 0.454237 | 0.917615 | 0.072294 | 5.765572 | 0.049917 |
| 0.480956 | 0.774648 | 0.076547 | 4.867283 | -0.042473 |
| 0.507676 | 0.826255 | 0.080799 | 5.191514 | 0.019184 |
| 0.534356 | 0.950454 | 0.085052 | 5.972132 | -2.007947 |
| 0.561118 | 0.902278 | 0.089304 | 5.669179 | -0.266894 |
| 0.587836 | 0.720724 | 0.093557 | 4.528445 | 0.034297 |
| 0.614555 | 0.574575 | 0.097809 | 3.610186 | 0.054918 |
| 0.641275 | 0.497001 | 0.102062 | 3.122746 | -0.032017 |
| 0.667995 | 0.542413 | 0.106315 | 3.408283 | 2.001871 |
| 0.694715 | 0.653023 | 0.110567 | 4.103062 | -0.010216 |
| 0.721434 | 0.627288 | 0.114820 | 3.941317 | 0.057073 |
| 0.748154 | 0.464210 | 0.119072 | 3.042375 | -0.024958 |
| 0.774874 | 0.398558 | 0.123325 | 2.506729 | 0.084786 |
| 0.801594 | 0.526115 | 0.127578 | 3.305701 | 0.015723 |
| 0.828314 | 0.753856 | 0.131830 | 4.736666 | -0.022718 |
| 0.855034 | 0.838374 | 0.136083 | 5.267657 | 0.044554 |
| 0.881753 | 0.972548 | 0.140335 | 6.110697 | -0.067955 |

| 0.908473 | 1.188648 | 0.144588 | 7.469755 | -0.018613 |
| 0.935193 | 1.271671 | 0.148841 | 7.990146 | 0.027010 |
| 0.961913 | 1.585205 | 0.153093 | 9.985251 | 0.042725 |
| 0.988632 | 1.984779 | 0.157346 | 12.470736 | 0.036392 |
| 1.015352 | 1.921777 | 0.161598 | 12.074879 | -0.028109 |
| 1.042072 | 1.779891 | 0.165851 | 11.183365 | 0.119045 |
| 1.068751 | 2.055415 | 0.170103 | 13.165965 | -0.074510 |
| 1.095511 | 2.436667 | 0.174356 | 15.310032 | 0.012987 |
| 1.122231 | 2.595655 | 0.178609 | 16.305235 | 0.053018 |
| 1.148952 | 2.755800 | 0.182861 | 17.315201 | -0.024797 |
| 1.175671 | 2.553834 | 0.187114 | 15.528550 | -0.015646 |
| 1.202351 | 2.347747 | 0.191366 | 14.751328 | 0.041868 |
| 1.229111 | 2.175763 | 0.195619 | 13.670722 | -0.041517 |
| 1.255830 | 1.882785 | 0.199872 | 11.829905 | 0.051053 |
| 1.282550 | 2.088562 | 0.204124 | 13.122822 | -0.025997 |
| 1.309270 | 2.329728 | 0.208377 | 14.658113 | -0.008319 |
| 1.335550 | 2.080340 | 0.212629 | 13.071194 | 0.089768 |
| 1.362705 | 1.860765 | 0.216882 | 11.691527 | -0.013651 |
| 1.389425 | 2.005128 | 0.221135 | 12.662372 | 0.028516 |
| 1.416145 | 2.038526 | 0.225387 | 12.810556 | 0.085961 |
| 1.442865 | 1.880450 | 0.225640 | 11.312816 | -0.255948 |
| 1.469584 | 1.722182 | 0.233892 | 10.828750 | 0.007920 |
| 1.496324 | 1.701285 | 0.238145 | 10.685515 | 0.069714 |
| 1.523024 | 1.663987 | 0.242357 | 9.552465 | -0.084161 |
| 1.565747 | 1.553451 | 0.244650 | 5.768865 | 0.079897 |
| 1.576468 | 1.582697 | 0.250583 | 8.459248 | 0.250760 |
| 1.603188 | 1.142423 | 0.255155 | 7.178053 | -0.054182 |

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT SI 1.603151
  ZEROTH MOMENT = 1.98650
  SECOND MOMENT = 2.38618
  FOURTH MOMENT = 3.75888
  BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) = 0.83893

SIGNIFICANT WAVE HEIGHT, H(1/3)
  4.0*RMS = 5.03858
  4.0*RMS*SQRT(1.0-RHO/2.0*2/2.0) = 0.22587

TABLE 26

TEST B15 WAVLEF

```
REAL MEAN  =        2443.56777CTS
INTEGER MEAN =      2444 CTS
RMS VALUE           1.15561 PHYSICAL UNITS
```

START SMOOTHING SPECTR FOR

TEST B15 WAVLEE

```
VELCCITY  =    0.00000 FPS
LAGS      =   60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.95559
```

CMEGA	S(CMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.000000	1.715755	0.000000	10.005816	1.335423
0.026726	1.625810	0.004253	6.465459	-0.070974
0.053440	0.321860	0.008505	2.022429	-0.099246
0.080165	0.280511	0.012756	1.762501	0.490626
0.106875	0.240584	0.017010	1.511635	-0.251965
0.133599	0.216137	0.021263	1.358630	-0.023245
0.160315	0.195545	0.025516	1.231181	0.198209
0.187039	0.198521	0.029768	1.247344	0.044450
0.213758	0.260476	0.034021	.1.636621	-0.050493
0.240478	0.325255	0.038273	2.068753	0.178260
0.267158	0.285775	0.042526	1.820789	0.039099
0.293916	0.241675	0.046778	1.518451	0.031131
0.320638	0.344132	0.051031	1.916918	0.252551
0.347367	0.342135	0.055284	2.145659	0.040469
0.374077	0.293593	0.055536	1.844700	2.062282
0.400797	0.286362	0.063789	1.799268	0.045566
0.427517	0.387580	0.068041	2.246743	0.071142
0.454237	0.367361	0.072294	2.308155	0.019678
0.480956	0.316241	0.076547	1.986999	0.027023
0.507676	0.325313	0.080799	2.065137	0.061099
0.534396	0.366943	0.085052	2.305573	0.006148
0.561116	0.336277	0.089304	2.111633	0.046029
0.587836	0.252646	0.093557	1.826184	0.013345
0.614555	0.276465	0.097809	1.737082	0.063012
0.641275	0.241191	0.102062	1.515446	0.031638
0.667995	0.222015	0.106315	1.354559	0.001075
0.694715	0.254458	0.110567	1.658026	0.075215
0.721434	0.249130	0.114820	1.565331	0.036917
0.748154	0.198345	0.119072	1.246241	0.024177
0.774874	0.224283	0.123325	1.408209	0.066322
0.801594	0.345642	0.127578	2.172588	0.058503
0.828314	0.474158	0.131830	2.975477	-0.005376
0.855034	0.617438	0.136083	3.875477	0.030570
0.881783	0.853862	0.140335	5.616302	0.076092

0.908473	1.099000	0.144588	6.905220	-0.053645
0.935193	1.210041	0.148841	7.600512	0.038354
0.961913	1.747501	0.153093	10.975875	0.125762
0.988632	2.238608	0.157346	14.065551	-0.021490
1.015352	2.066574	0.161558	12.987178	0.026791
1.042072	2.052432	0.165851	12.895810	0.103599
1.068751	2.451229	0.170103	15.401525	-0.004365
1.095511	2.337671	0.174356	14.688021	0.021326
1.122231	2.048746	0.178605	12.872651	0.070910
1.148951	2.112018	0.182861	13.270198	0.044202
1.175671	2.022517	0.187114	12.707850	-0.026169
1.202391	1.864238	0.191366	11.712052	0.100706
1.229111	1.701474	0.195619	10.690677	-0.000989
1.255830	1.452637	0.199872	9.365947	0.035701
1.282550	1.254353	0.204124	7.881330	0.063192
1.305270	1.121593	0.208377	7.047179	-0.011180
1.335990	1.333531	0.212625	8.381335	0.099444
1.362705	1.402257	0.216882	8.810640	0.003444
1.389425	1.227154	0.221135	7.710686	0.038236
1.416145	1.065590	0.225387	6.654940	0.065760
1.442869	0.827618	0.229640	5.200323	0.019185
1.469588	0.718485	0.233892	4.514373	0.003088
1.496308	0.661416	0.238145	4.155756	0.075728
1.523028	0.566680	0.242397	3.547551	0.002657
1.549747	0.560292	0.246650	3.520421	0.024399
1.576468	0.515422	0.250903	3.238669	0.079234
1.603188	0.462747	0.255155	2.907524	-0.002125

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT F1   1.603155
    ZEROTH MOMENT =   1.33548
    SECOND MOMENT =   1.84633
    FOURTH MOMENT =   0.31640
    BROADNESS FACTOR (SQRT(1.0-F2**2/(F0*F4))) =   0.68884

    SIGNIFICANT WAVE HEIGHT, H(1/3)
        4.00RMS =   4.62242
        4.00RMS*SQRT(1.0-PHYSICAL/0.0**2/24E) =   4.34783
```

TABLE 27

TEST 518 8-C C15FL

```
REAL  MEAN  =        1683.71151CTS
INTEGER MEAN =       1684 CTS
RMS VALUE            1.37662 PHYSICAL UNITS
```

START SMOOTHING SPECTR FOR

TEST 518 8-C C18FL

```
VELOCITY  =    0.00000 FPS
LAGS      =    60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =  1.55555
```

OMEGA	S(OMEGA)	FREQUENCY	S(FREG)	AUTOCOR
0.000000	0.565765	0.000000	5.537748	-1.804645
0.026726	0.355265	0.004285	2.520225	-0.812527
0.053448	0.361885	0.008505	2.268264	-0.787357
0.080159	0.847571	0.015285	1.586833	0.791988
0.106859	0.623971	0.017055	1.586633	0.792958
0.133555	0.273512	0.021263	1.721840	-0.556354
0.162315	0.286631	0.025516	1.680564	0.179103
0.187035	0.655085	0.025765	1.883732	0.425020
0.213755	0.274782	0.034081	1.726505	-0.134585
0.240478	0.265202	0.038273	1.666814	-0.125548
0.267158	0.274120	0.042586	1.782349	0.138516
0.253518	0.283575	0.246778	1.555775	0.079593
0.320638	0.276458	0.051031	1.737288	0.809304
0.347357	0.357706	0.055284	2.245923	0.809303
0.374077	0.450855	0.055536	2.831153	-0.807909
0.400757	0.553547	0.063785	3.731878	0.254888
0.427517	0.615110	0.068041	3.864852	0.163332
0.454237	0.468130	0.072254	2.503646	-0.037285
0.480556	0.412760	0.076547	2.553448	-0.097529
0.507676	0.547021	0.080795	3.437037	0.243847
0.534356	0.714515	0.085058	4.485428	0.100387
0.561116	0.655845	0.085304	4.357281	-0.308715
0.587836	0.533113	0.093557	3.345648	0.063138
0.614555	0.406743	0.097805	2.555640	0.431528
0.641275	0.350552	0.102065	2.205350	-0.104768
0.667555	0.341356	0.106315	2.144806	-0.344636
0.694715	0.441541	0.110567	2.776755	0.369344
0.721434	0.545256	0.114822	3.425545	0.232967
0.748154	0.565522	0.119072	3.553279	-0.421597
0.774874	0.557566	0.123385	3.505807	0.024367
0.801594	0.524733	0.127575	5.530266	0.434752
0.828314	3.486442	0.131835	21.968256	-0.085263
0.855034	5.551058	0.136053	34.878326	-0.267398
0.881753	3.415540	0.140335	21.462582	0.201891

0.908473	1.544140	0.144588	5.702116	0.235789
0.935193	3.578374	0.148841	22.483587	-0.204287
0.961913	6.225035	0.153093	35.113068	-0.269479
0.988632	5.548368	0.157346	34.861428	0.281405
1.015352	3.382246	0.161558	21.125610	0.003891
1.042072	2.733620	0.165851	17.175842	-0.106205
1.068751	2.728042	0.170103	17.052658	0.065967
1.095511	2.462853	0.174356	15.474564	0.069912
1.122231	2.152867	0.178609	13.523094	0.058284
1.148552	1.614515	0.182861	10.146833	-0.059571
1.175671	1.311338	0.187114	8.235382	-0.042549
1.202351	1.377821	0.191366	8.657481	0.138261
1.229111	1.115512	0.195635	7.011484	0.111727
1.255832	0.758265	0.199872	4.763862	-0.179820
1.282552	0.756545	0.204124	4.753510	0.021699
1.309272	0.870721	0.208377	5.478501	0.108417
1.335552	0.881337	0.212685	5.534548	0.003025
1.362785	0.704313	0.216888	4.425331	-0.123325
1.385425	0.638723	0.221139	4.000651	0.054401
1.416145	0.523286	0.225387	3.287504	0.211139
1.442865	0.516858	0.229642	5.810865	-0.034618
1.465588	0.506338	0.233855	3.181417	-0.137470
1.496308	0.526705	0.238145	2.881858	0.178743
1.523028	0.355601	0.242357	2.564587	0.110889
1.545747	0.354401	0.246656	2.478097	-0.172548
1.576468	0.411557	0.250683	2.585587	0.015041
1.603188	0.443066	0.255188	2.783888	0.174893

```
THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT  S( 1.602191)
     ZEROTH MOMENT =        3.88485
     SECOND MOMENT =        1.78892
     FOURTH MOMENT =        2.18484
     BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) =        0.47996

     SIGNIFICANT WAVE HEIGHT, H(1/3)
          H(1/3)RMS  =       5.48130
```

TEST BIB HAWKINS

REAL MEAN = 5628.5148ECTS
INTEGER MEAN = 5625 CTS
RMS VALUE = 8.86822 PHYSICAL UNITS

STANT SMOOTHING SPECTR FOR

TEST BIB HAWKINS

VELOCITY = 8.88888 FPS
LAGS = 68
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.58585

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	10.565561	0.000000	67.456256	-1.813928
0.053448	2.815646	0.008505	5.124857	-1.007267
0.080155	0.743061	0.015255	4.668769	1.527831
0.106675	0.854528	0.017010	5.826484	2.588559
0.133555	1.026278	0.021263	6.448244	-0.360132
0.160315	0.566278	0.025516	6.871254	2.286634
0.187035	0.530135	0.025768	5.844212	0.462534
0.213758	0.541023	0.234021	5.512458	0.184554
0.240478	0.515547	0.038273	5.752550	0.250253
0.267198	0.872482	0.042526	5.481565	0.201596
0.293518	0.847748	0.046778	5.326554	0.178528
0.320638	0.812263	0.051031	5.163021	0.431451
0.347357	0.783327	0.055284	4.733253	0.264423
0.374077	0.764802	0.055536	4.428400	0.095633
0.400757	0.558450	0.063789	3.684774	0.330534
0.427517	0.528530	0.066041	3.270553	0.369281
0.454237	0.562815	0.072254	3.661557	0.128518
0.480556	0.578576	0.076547	3.637811	0.305851
0.507676	0.579056	0.080755	3.634567	0.347078
0.534396	0.688034	0.885052	4.134551	0.195574
0.561116	0.738615	0.065384	4.637113	0.278127
0.587836	0.862223	0.093557	5.420017	2.318851
0.614555	1.086516	0.057805	6.326648	0.200329
0.641275	1.057755	0.102042	6.857676	0.391147
0.667995	1.285938	0.106315	7.851288	0.146064
0.694715	1.553537	0.110567	12.528278	0.257050
0.721434	2.762854	0.114820	17.355528	0.384762
0.748154	3.181407	0.119072	15.486710	0.298390
0.774874	3.804256	0.123385	23.502847	0.135555
0.801594	4.852327	0.127578	30.487946	0.233587
0.828314	5.866745	0.131830	36.861847	0.443371
0.855034	5.935576	0.136083	37.321568	0.176168
0.881753	5.383613	0.140335	33.826233	0.131108

0.508473	5.632418	0.144588	35.385481	0.413299
0.535193	6.162713	0.148841	38.721466	0.195617
0.561513	6.245284	0.153053	35.265411	0.218873
0.588632	6.022870	0.157346	37.542884	0.339421
0.615352	6.658585	0.161558	41.836635	0.182095
0.642072	7.334802	0.165851	46.080887	0.171487
0.668751	6.114745	0.170103	38.420074	0.342667
0.695511	4.758146	0.174356	30.147644	0.254770
0.722231	4.253401	0.178605	26.576287	0.108625
0.748952	3.628861	0.182861	22.755683	0.356274
0.775671	3.371538	0.187114	21.183568	0.132528
0.802351	3.565649	0.191366	22.428757	0.297531
0.829111	3.858076	0.195615	28.672165	0.352338
0.855830	2.661664	0.199872	16.845388	0.149431
0.882550	2.366858	0.204124	14.871484	0.180749
0.905270	2.525767	0.208377	15.865864	0.417471
0.935550	2.655544	0.212625	16.535117	0.331828
0.962729	2.330636	0.216882	14.643817	0.105406
0.985425	1.546628	0.221135	18.724688	0.278342
1.016145	1.582758	0.225387	18.445431	0.335197
1.042865	1.553438	0.229640	18.273811	0.265533
1.069588	1.862408	0.233853	11.708102	0.183753
1.096308	1.682088	0.238145	10.568833	0.333978
1.523028	1.350658	0.242357	8.466437	0.103678
1.545747	1.356823	0.246657	8.525169	0.267977
1.576468	1.607526	0.250883	18.182859	0.279564
1.603188	1.738185	0.255155	18.561176	0.097541

ERRCROSS   5565 (28886)   33F8 (17F88)
ARG1 AT 88CC

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S1   1.863151

ZEROTH MOMENT = 4.24485
SECOND MOMENT = 4.15058
FOURTH MOMENT = 5.85163
BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) =   0.839RR

SIGNIFICANT WAVE HEIGHT, H1/3
H1/3RMS =   8.8858

TABLE 29

TEST 518 WAVLEE

REAL MEAN = 2553.5865SCTS
INTEGER MEAN = 2554 CTS
RMS VALUE = 1.62720 PHYSICAL UNITS

START SUBROUTINE SPECTR FOR

TEST 518 WAVLFE

VELOCITY = 0.00000 FPS
LAG = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	E(FREQ)	AUTOCOR
0.000000	2.738374	0.000000	17.457031	2.647388
0.026720	1.551295	0.004293	5.558426	-0.622280
0.053440	0.421821	0.008585	2.650256	-0.900342
0.080855	0.752926	0.012878	7.886859	0.269586
0.133555	0.782156	0.021263	4.514680	-0.597805
0.160315	0.521025	0.025556	3.273658	0.182821
0.187035	0.573585	0.029768	3.603541	0.317152
0.213758	0.540271	0.034081	3.393363	-0.085915
0.240478	0.473726	0.038373	2.576385	0.007455
0.267158	0.426446	0.042526	2.675400	0.048888
0.293518	0.385542	0.046778	2.424545	0.021735
0.320638	0.362736	0.051031	2.275138	0.141905
0.347357	0.381375	0.055284	2.356273	-0.020106
0.374077	0.401644	0.059536	2.523603	-0.150174
0.400797	0.325044	0.063789	2.067444	0.225146
0.427517	0.246347	0.068041	1.547846	0.127406
0.454237	0.256113	0.072294	1.621774	-0.239041
0.480956	0.263317	0.076547	1.654472	0.166727
0.507676	0.214500	0.080799	1.347741	0.201866
0.534396	0.200015	0.085052	1.254430	-0.169499
0.561116	0.256771	0.089304	1.664666	0.044507
0.587836	0.455665	0.093557	2.863050	0.196356
0.614555	0.499577	0.097809	3.141445	0.032429
0.641275	0.438623	0.102062	2.757205	-0.012294
0.667995	0.478514	0.106315	3.006655	0.052123
0.694715	0.767271	0.110567	4.820507	0.169168
0.721434	1.143774	0.114820	7.186543	0.143583
0.748154	1.481608	0.119072	9.305219	0.025195
0.774874	1.564895	0.123325	12.3458.4	0.023201
0.801594	2.432062	0.127578	15.268851	0.251445
0.828314	3.863713	0.131830	23.855429	0.087650
0.855034	5.601087	0.136083	35.152657	-0.093574
0.881753	5.298621	0.140335	33.252221	0.248645

0.508473	4.057932	0.144588	25.456735	0.216949
0.535153	4.135278	0.148841	25.582681	-0.138490
0.561912	4.926553	0.153093	30.554437	0.092313
0.588632	5.215854	0.157346	32.772430	0.266124
1.015352	5.561251	0.1598	34.542368	-0.082204
1.042072	6.276201	0.165851	35.434540	0.221055
1.068791	5.406231	0.170103	33.568353	0.121664
1.095511	3.336777	0.174356	20.965551	0.011219
1.122231	2.622088	0.178609	16.475867	0.085510
1.149552	2.536851	0.182861	15.535584	-0.003760
1.175671	2.172812	0.187114	13.652183	-0.054248
1.202391	2.278575	0.191366	14.315219	0.186580
1.229111	2.176651	0.195615	13.638856	-0.024444
1.255830	1.683587	0.199878	10.578289	-0.086951
1.282550	1.336760	0.204124	8.399188	0.125637
1.309270	1.075541	0.208377	6.757820	0.087116
1.335990	1.010867	0.212625	6.351465	0.000726
1.362705	1.045615	0.216888	6.565754	0.002174
1.389425	0.570805	0.221135	6.055775	0.065142
1.416145	0.834135	0.225387	5.641026	0.144513
1.442865	0.748118	0.255640	4.700566	0.020701
1.469588	0.733533	0.233858	4.611435	0.002168
1.496308	0.656452	0.238148	4.124664	0.136584
1.523028	0.538600	0.242397	3.384183	0.063814
1.549747	0.565188	0.246659	3.513433	0.011404
1.576468	0.575838	0.250903	3.616175	0.067261
1.603188	0.536845	0.255198	3.373054	0.129793

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.60315)
ZEROTH MOMENT = 2.64735
SECOND MOMENT = 2.05811
FOURTH MOMENT = 3.20626
BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) = 0.47868

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 6.50832
4.0*RMS*SQRT(1.0-BRCAC*0.5/2.0) = 6.15430

TABLE 30

TEST K15 WAVHINE

REAL PEAK = 3547.77288CTS
INTEGER PEAK = 3548 CTS
RMS VALUE = 1.33165 PHYSICAL UNITS

START SLEROLTINE SPECTR FOR

TEST R15 WAVHINE

VELOCITY = 0.00000 FPS
LAGS = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.95959

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.002008	0.215247	0.000000	1.352435	1.773295
0.026728	0.215635	0.004253	1.354877	-0.858242
0.053448	0.221568	0.008525	1.394667	0.108075
0.086155	0.248123	0.012758	1.559802	0.336327
0.106875	0.282422	0.017018	1.774511	-0.370979
0.133555	0.281123	0.021263	1.766350	0.019339
0.160315	0.265588	0.025516	1.668738	0.087764
0.187035	0.251255	0.029768	1.830089	-0.044655
0.213758	0.334041	0.034021	2.058841	0.082634
0.240478	0.359353	0.038273	2.257882	0.029396
0.267198	0.378856	0.042526	2.380675	-0.001354
0.293518	0.385356	0.046778	2.446685	-0.012868
0.320638	0.402540	0.051031	2.531747	-0.011124
0.347357	0.466188	0.055284	2.929898	0.020691
0.374077	0.543438	0.059536	3.414523	-0.054596
0.400757	0.545443	0.063789	3.427116	0.039567
0.427517	0.467735	0.068041	3.664528	0.013058
0.454237	0.431655	0.072294	2.712172	-0.028228
0.480956	0.353572	0.076547	2.472886	0.010627
0.507676	0.387649	0.080799	2.435678	0.016814
0.534356	0.368336	0.085052	2.314325	-0.023450
0.561116	0.334447	0.089304	2.101351	-0.044143
0.587836	0.346058	0.093557	2.174344	0.063224
0.614555	0.332884	0.097809	2.086042	-2.025460
0.641275	0.279287	0.102062	1.754812	-0.040719
0.667995	0.284565	0.106315	1.787999	0.084061
0.694715	0.302412	0.110567	1.900109	-0.029902
0.721434	0.273361	0.114820	1.717580	-0.021431
0.748154	0.275516	0.115072	1.731119	0.040032
0.774874	0.366113	0.123325	2.300316	-0.007831
0.801594	0.427164	0.127578	2.683545	-0.030462
0.828314	0.472532	0.131830	2.971519	0.037229
0.855034	0.675548	0.136083	4.265674	-0.024851
0.881753	0.555601	0.140335	6.004215	0.033608

0.908473	0.583426	0.144588	6.175047	-0.007901
0.935153	0.561704	0.148841	6.168226	-0.016093
0.961513	1.341124	0.153093	8.175280	-0.004844
0.988632	1.715108	0.157346	10.776293	0.039352
1.015352	2.254512	0.161598	14.168032	-0.021474
1.042072	2.576655	0.165851	16.185686	-0.052525
1.068791	2.275858	0.170103	14.324767	0.075529
1.095511	2.188954	0.174356	13.628150	-0.056133
1.122231	2.566452	0.178609	16.125488	-0.006275
1.148952	2.749822	0.182861	17.277634	0.055909
1.175671	2.667357	0.187114	16.755526	-0.239812
1.202391	2.555945	0.191366	16.335937	0.000011
1.229111	2.517641	0.195619	15.818805	0.009692
1.255830	2.635555	0.199872	16.555728	-0.002825
1.282550	2.643575	0.204124	16.618052	-0.006488
1.309270	2.656200	0.208377	14.448014	0.006684
1.335990	2.075726	0.212625	13.067305	0.009463
1.362709	1.978025	0.216882	12.428174	-0.003393
1.389925	1.834436	0.221135	11.526103	-0.032438
1.416145	1.875030	0.225387	11.882254	0.052769
1.442865	1.984736	0.225640	12.472467	-0.027846
1.469585	1.885466	0.233892	11.465866	-0.008454
1.496305	1.667782	0.238145	10.415651	0.016192
1.523028	1.645186	0.242397	10.336633	0.013992
1.545747	1.610579	0.246650	10.115839	-0.007289
1.576466	1.454795	0.250903	9.352057	-0.047777
1.603188	1.418352	0.255155	8.861763	0.076304

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.08315)
    ZEROTH MOMENT = 1.77330
    SECOND MOMENT = 0.58868
    FOURTH MOMENT = 3.57858
    BROADNESS FACTOR (SQRT(1-M2**2/(M0*M4))) = 0.44252

SIGNIFICANT WAVE HEIGHT, H(3/3)
    4.0*RMS = 5.32661
    4.0*RMS*SQRT(1-BROADNESS**2/2.0) = 5.05512

TABLE 31

REAL PEAK = 6575.15503015
INTEGER PEAK = 2575 CTS
RMS VALUE 1.02500 PHYSICAL UNITS

C TEST CIS WAVLEE

START SUBROUTINE SPECTR FOR

TEST 615 WAVLEE   -48-

VELOCITY = 0.20000 FPS
LAGS   = 60
SPECTRAL UNITS = (PHYSICAL UNITS)**2-SEC
SAMPLING RATE = 1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	0.184657	0.000000	0.657579	1.050633
0.026720	0.164523	0.004253	0.655127	-0.530857
0.053440	0.187576	0.008505	0.675520	-0.023917
0.080160	0.140771	0.012758	0.884450	0.324911
0.100875	0.172375	0.017010	1.283061	-0.232545
0.133555	0.147983	0.021263	0.925866	-0.043375
0.160315	0.118276	0.025516	0.743153	0.118518
0.187035	0.122588	0.025768	0.765739	-0.030641
0.213758	0.131641	0.034021	0.827124	-0.039890
0.240478	0.143508	0.038273	0.901685	0.046815
0.267198	0.165562	0.042526	1.040254	-0.007316
0.253518	0.155254	0.046778	1.000621	-0.026220
0.320638	0.140535	0.051031	0.883035	-0.020385
0.347357	0.181358	0.055284	1.135759	0.016287
0.374077	0.247186	0.059536	1.553115	-0.019898
0.400757	0.236374	0.063785	1.485184	0.005320
0.427517	0.178121	0.068041	1.119164	-0.006714
0.454237	0.163075	0.072294	1.024631	0.007168
0.480556	0.170508	0.076547	1.071332	0.000571
0.507676	0.156803	0.080799	0.980158	-0.016975
0.534356	0.141727	0.085052	0.890455	0.014020
0.561116	0.141272	0.089304	0.887637	-0.038888
0.587836	0.139270	0.093557	0.875056	0.042570
0.614555	0.131684	0.097809	0.827354	-0.035638
0.641275	0.115572	0.102062	0.751254	0.012693
0.667995	0.115321	0.106315	0.745718	0.014907
0.694715	0.123250	0.112567	0.774655	0.019841
0.721434	0.125573	0.114820	0.788957	-0.030852
0.748154	0.154182	0.119072	0.966757	0.019772
0.774874	0.154342	0.123325	1.221076	0.019167
0.801594	0.226789	0.127578	1.387260	-0.054372
0.828314	0.238973	0.131830	1.501513	0.049767
0.855034	0.335704	0.136083	2.109253	-0.039501
0.881753	0.639716	0.140335	4.019455	0.064933

0.928473	0.886756	0.144588	5.383408	-0.022876
0.935193	0.587708	0.148841	5.703247	-0.001753
0.961913	1.175536	0.153093	7.411242	0.229553
0.988632	1.465473	0.157346	9.235670	-0.016401
1.015352	1.660576	0.161598	10.433705	-0.027729
1.042072	1.775036	0.165851	11.155675	0.033806
1.068791	1.741756	0.170103	10.544632	-0.223510
1.095511	1.740858	0.174356	10.538385	0.005534
1.122231	1.836571	0.178609	11.542630	-0.014111
1.148952	1.967908	0.182861	11.587741	0.018964
1.175671	1.718723	0.187114	10.748789	-0.000876
1.202391	1.463037	0.191366	9.192530	-0.037632
1.229111	1.517267	0.195619	9.533271	0.031831
1.255830	1.866505	0.199872	5.487036	0.007449
1.282550	1.266505	0.204124	7.557710	-0.037892
1.309270	1.228053	0.208377	7.716084	0.018672
1.335550	1.246166	0.212629	7.825893	0.006736
1.362705	1.027578	0.216882	6.456423	-0.005641
1.385925	0.833475	0.221135	5.236877	-0.030856
1.416145	0.988818	0.225387	6.208281	0.047372
1.442865	1.167741	0.229640	7.337132	-0.032240
1.465585	1.154355	0.233892	7.253250	-0.013185
1.496306	0.826641	0.238145	5.158168	0.027063
1.523026	0.654875	0.242397	4.114727	-0.004748
1.549747	0.768897	0.246660	4.788854	-0.025505
1.576468	0.766114	0.250903	4.813633	0.021625
1.603188	0.674531	0.255155	4.238283	0.001622

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT B(1.60315)
    ZEROTH MOMENT =   1.02005
    SECOND MOMENT =   3.35066
    FOURTH MOMENT =   2.24412
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4))) =   0.41268

    SIGNIFICANT WAVE HEIGHT, H(1/3)
              4.0*RMS =   4.10005
        4.0*RMS*SQRT(1.0-BROAD**2/2.0) =   3.92197

TABLE 32

TEST DATA

-49-

START SMOOTHING SPECTR FOR

TEST #18A   *WAVWIND*

VELOCITY =   0.00000 FPS
LAGS   =   60
SPECTRAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE =   1.55555

OMEGA	S(OMEGA)	FREQUENCY	S(FREQ)	AUTOCOR
0.000000	1.565257	0.000000	2.573573	3.202222
0.026722	0.543124	0.004253	5.516422	-1.165228
0.053442	0.464666	0.008505	2.515222	-0.692328
0.188655	0.302385	0.013758	5.766665	0.153228
0.133595	0.454503	0.021263	3.107056	-0.262649
0.160315	0.476823	0.025516	2.959537	-0.138411
0.187035	0.530590	0.025768	3.333756	0.151963
0.213758	0.525283	0.034021	3.324326	0.111627
0.240478	0.466500	0.038273	2.933618	-0.006470
0.267158	0.462418	0.042526	2.905460	-0.114550
0.293918	0.562566	0.046778	3.162225	0.127235
0.320638	0.485565	0.051031	3.050518	0.073846
0.347357	0.515155	0.055284	3.236841	-0.047411
0.374077	0.471435	0.059536	2.962137	0.014844
0.400757	0.365711	0.063785	2.297828	0.016644
0.427517	0.362453	0.068041	2.277360	0.066603
0.454237	0.360453	0.072294	2.264752	0.041209
0.480956	0.362658	0.076547	1.901505	-0.078224
0.507676	0.295265	0.080755	1.855227	0.158750
0.534356	0.367531	0.085052	2.305265	0.023382
0.561116	0.520445	0.089304	3.270079	-0.072562
0.587836	0.566245	0.093557	3.683512	0.006414
0.614555	0.451212	0.097809	3.086373	0.177226
0.641275	0.538225	0.102062	3.381758	-0.013979
0.667995	0.593046	0.106315	5.755666	-0.123646
0.694715	1.566508	0.110567	5.566322	0.115294
0.721434	1.861575	0.114820	11.656621	0.046504
0.748154	1.905124	0.119072	11.970244	-0.021065
0.774874	2.618771	0.123325	16.454224	0.130648
0.801594	3.845315	0.127578	24.185589	-0.065987
0.828314	4.422427	0.131830	27.786526	-0.036402
0.855034	4.274857	0.136083	26.855570	0.129254
0.881753	4.505574	0.140337	28.305357	0.062189

0.508473	3.562657	0.144588	24.858361	-0.084734
0.535193	3.475630	0.148841	21.863155	-0.032010
0.561913	4.551765	0.153093	28.555579	0.204720
0.588632	4.835524	0.157346	30.407623	-0.051963
1.015352	3.585256	0.161558	25.042100	-0.169405
1.042072	3.535874	0.165851	22.216553	0.045866
1.068751	3.851101	0.170103	24.197174	0.137495
1.095511	4.156257	0.174356	26.113281	-0.158044
1.122231	4.218150	0.178609	26.50341?	0.043425
1.148952	3.586553	0.182861	25.057766	0.052866
1.175671	3.545385	0.187114	22.301468	-0.025695
1.202391	3.542473	0.191366	22.320847	-0.025079
1.229111	3.268346	0.195619	20.435089	0.014687
1.255830	2.661571	0.195872	16.851318	0.079656
1.282550	2.536721	0.204124	15.536685	-0.093632
1.309270	2.661821	0.208377	16.650372	-0.113178
1.335990	2.541552	0.212629	16.048274	0.198070
1.362709	2.864685	0.216882	17.955562	0.006444
1.389429	2.448101	0.221135	15.331604	-0.213585
1.416149	2.302275	0.225387	14.446648	0.126929
1.442865	2.256713	0.225640	14.175345	0.146659
1.465588	2.004022	0.233892	12.551635	-0.074100
1.456308	2.643436	0.238145	16.835887	0.073704
1.523028	2.136651	0.242397	13.387871	0.038160
1.545747	1.762753	0.246650	11.075788	-0.050432
1.576468	1.505522	0.250503	5.486554	0.100892
1.603186	1.543541	0.255155	5.658384	-0.062145

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREQUENCY TRUNCATION
AT S(1.60315)
    ZEROTH MOMENT =   3.20222
    SECOND MOMENT =   3.68520
    FOURTH MOMENT =   5.46570
    BROADNESS FACTOR (SQRT(1.0-M2**2/(M0*M4)) =   0.47262

    SIGNIFICANT WAVE HEIGHT, H(1/3)
      4.0*RMS =   7.35758
      4.0*RMS*SQRT(1.0-BROAD/2.0) =   6.74636

TABLE 33

REAL PEAK = 3856.6766CTS
INTEGER PEAK = 3856 CTS
RMS VALUE = 1.58741 PHYSICAL UNITS

START SPEKCLTING SPECTH FOR

TEST K1EA WAVLFE

VELCCITY = 0.00000 FPS
LAGS = 60
SPECTFAL UNITS = (PHYSICAL UNITS)**2*SEC
SAMPLING RATE = 1.55555

CMEGA	S(CMEGA)	FREGLENCY	S(FREG)	AUTOCCR
0.000000	0.632876	0.000000	3.576480	2.272286
0.026720	0.466467	0.004253	2.530523	-0.810113
0.053440	0.232088	0.008505	1.458252	-0.814770
0.080155	0.226352	0.012758	1.422465	0.877543
0.106875	0.281851	0.017010	1.771174	0.165662
0.133595	0.232802	0.021263	1.462737	-0.391769
0.160315	0.225743	0.025516	1.418388	-0.036972
0.187035	0.274233	0.025768	1.723468	0.229091
0.213758	0.251208	0.034021	1.578385	-0.010660
0.240478	0.150388	0.038273	1.156225	-0.078114
0.267158	0.165575	0.042526	1.042458	0.031936
0.253518	0.165553	0.046778	1.042568	0.050618
0.320638	0.185536	0.051031	1.158887	-0.225571
0.347357	0.225081	0.055284	1.435558	0.008301
0.374077	0.222811	0.059536	1.387354	0.007483
0.400797	0.160530	0.063789	1.011154	0.023726
0.427517	0.133482	0.068041	0.838654	-0.012525
0.454237	0.163164	0.072294	1.025150	0.045115
0.480956	0.170651	0.076547	1.072232	-0.083272
0.507676	0.145503	0.080799	0.520088	0.053756
0.534356	0.133373	0.085052	0.838005	0.069061
0.561116	0.163725	0.085304	1.028712	-0.024445
0.587836	0.247665	0.053557	1.557375	-0.057768
0.614555	0.358768	0.057809	2.204013	0.056710
0.641275	0.424321	0.102062	2.666086	0.059589
0.667595	0.625475	0.106315	3.929958	-0.073113
0.654715	1.043707	0.110567	6.557803	0.017277
0.721434	1.212503	0.114820	7.620854	0.227495
0.748154	1.247524	0.115072	7.838426	0.058952
0.774874	1.564517	0.123325	11.566434	0.033515
0.801154	3.286314	0.127578	15.351176	-0.101335
0.828314	3.404586	0.131830	21.771149	0.030752
0.855034	3.146121	0.136083	15.767654	0.143679
0.881753	3.658151	0.140335	23.236160	-0.039688

CMEGA	S(CMEGA)	FREGLENCY	S(FREG)	AUTOCCR
0.908473	4.356853	0.144588	27.374508	-0.076551
0.935153	4.265504	0.148841	26.803467	0.048839
0.561513	4.375537	0.153093	27.515558	0.148267
0.988652	4.462646	0.157346	28.165258	-0.087626
1.015352	3.744878	0.161598	23.525755	-0.066348
1.042072	3.174387	0.165851	15.545267	0.109633
1.068791	3.215864	0.170103	20.231003	-0.002022
1.055511	3.152678	0.174356	20.060156	-0.081351
1.122231	3.062057	0.178609	19.235471	0.049794
1.148952	2.704575	0.182861	16.995580	0.022398
1.175671	2.346471	0.187114	14.743310	-0.039358
1.202351	2.213851	0.191366	13.510035	-0.024456
1.229111	2.112678	0.195619	13.274344	0.055434
1.255830	1.846058	0.199872	11.559375	-0.024818
1.282550	1.651423	0.204124	10.376159	-0.015571
1.309270	1.811274	0.208377	11.380567	0.014934
1.335550	1.761548	0.212629	11.066685	-0.044658
1.362785	1.420110	0.216882	8.522812	0.098210
1.385425	1.130015	0.221135	7.103885	-0.062467
1.416149	0.574338	0.225387	6.121543	-0.062593
1.442865	1.015867	0.225640	6.382882	0.076477
1.465588	1.056320	0.233858	6.684418	0.037355
1.456308	1.165154	0.238148	7.346815	-0.064608
1.523028	1.066258	0.247357	6.661757	-0.010494
1.545747	0.761362	0.246650	4.783780	0.078919
1.576168	0.661555	0.250502	3.222518	-0.089268

THE SPECTRAL MOMENTS WERE COMPUTED
USING A HIGH FREGLENCY TRUNCATION
AT S(1.462315)
ZEROTH MOMENT = 2.27865
SECOND MOMENT = 0.45883
FOURTH MOMENT = 3.35955
BROADNESS FACTOR (SGRT(1.0-M2**2/(M0*M4))) = 0.43812

SIGNIFICANT WAVE HEIGHT, H(1/3)
4.0*RMS = 6.0VE564
4.0*RMS*SGRT(1.0-BROAC/2/2.0) = 6.73300

TABLE 34